3.3 Biological Resources

This section of the Draft EIR evaluates potential impacts to biological resources associated with implementation of the proposed Golden State Natural Resources Forest Resiliency Demonstration Project (proposed project). This section describes the existing biological resources conditions at feedstock source locations, proposed pellet processing facility sites in Northern California (Lassen Facility) and the Central Sierra Nevada foothills (Tuolumne Facility), and the export facility at the Port of Stockton, California (Port); and evaluates the potential for project-related biological resource impacts, considering proposed project design features (PDFs) and mitigation measures that could reduce or eliminate associated impacts. Ten scoping letters were received that included comments regarding biological resources in response to the Notice of Preparation (NOP) (see Appendix A). These comments generally related to potential impacts to special-status species and their habitat; impacts to native trees and sensitive natural communities; and impacts to biodiversity.

3.3.1 Environmental Setting

3.3.1.1 Sustainable Forest Management Projects (Feedstock Acquisition in the Working Area)

As described in Section 2.4, Feedstock Acquisition, of Chapter 2, Project Description, feedstock for manufacturing of wood pellets will be sourced from Sustainable Forest Management Projects on private, state, tribal, and federal timberlands. GSNR will enter into agreements with Licensed Timber Operators (LTOs) and other supply chain industry participants to procure feedstock from qualified Sustainable Forest Management Projects. These activities will occur primarily within federal and state forests, and private lands where the zoning permits timber production and harvest of forest materials.

The Working Area for Sustainable Forest Management Projects (feedstock acquisition) is shown in Figure 2-1, Working Area (Lassen), and Figure 2-2, Working Area (Tuolumne). The Working Area consists of forested land within roughly 100 miles of the pellet processing sites (Lassen Facility and Tuolumne Facility), excluding areas limited by environmental factors, roadway access, or lack of adequate forest land. The Working Area includes parts of California, southern Oregon, and western Nevada.

In 2019, the Golden State Finance Authority (GSFA) and the U.S. Forest Service (USFS) signed a 20-year Master Stewardship Agreement (MSA) for the general purpose of achieving resilient forests within USFS Region 5, which includes all of the 18 national forests located in California. Stewardship agreements (SA) are a tool that the USFS can use to engage non-federal partners when there is mutual interest and mutual benefit presented in a proposed project to be implemented on National Forest System lands. The project(s) under the agreement must meet one of the seven land management goals specified in policy under the Stewardship Authority. SA can be entered into for up to 20 years. This MSA forms the backbone of the Forest Resiliency Initiative (GSFA 2024). Feedstock for manufacturing of wood pellets will be wood byproducts sourced from Sustainable Forest Management Projects, including GSNR biomass only thinning projects and harvest or mill residuals from third-party hazardous fuel reduction projects. While the MSA applies to the entirety of Region 5, only Sustainable Forest Management Projects within the Working Area described in Section 2.4 are contemplated under the proposed project. In addition, the Working Area includes public and private forested lands in Nevada and Oregon, including parts of Regions 4 and 6 of the USFS in western Nevada and southern Oregon, respectively.

Desktop Biological Resources Assessment

In order to better understand the existing biological resources associated with the proposed Working Area for Northern California (Lassen Facility) and Central Sierra Nevada (Tuolumne Facility) (see Figures 2-1 and 2-2), Dudek performed a review of pertinent online databases and literature sources to identify and characterize vegetation communities and the potential for special-status plant and wildlife species, sensitive natural communities, and aquatic features to occur within the Working Area. This primarily consisted of performing a spatial overlay of publicly available GIS datasets over the Working Area and evaluating the results of this overlay. Information and GIS datasets were acquired from the following sources:

- BLM California Plant Special Status Species List (BLM 2023a)
- BLM Nevada Special Status Species List (BLM 2023b)
- BLM Special Status Animals in California, Including BLM Designated Sensitive Species (BLM 2019)
- CDFW California Natural Diversity Database (CNDDB) (CDFW 2024a)
- CDFW Spotted Owl Observations Database (CDFW 2024b)
- CDFW Special Animals List; State and Federally Listed Endangered and Threatened Animals of California; Special Vascular Plants, Bryophytes, and Lichens List; State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW 2024e, 2024f, 2024g, 2024h)
- EPA Level III and Level IV Ecoregions of California, Nevada, and Oregon (EPA 2024)
- National Oceanic and Atmospheric Administration (NOAA) Fisheries Critical Habitat (NOAA 2024)
- Nevada Department of Agriculture Noxious Weed List (NVDA 2024)
- Nevada Division of Forestry Threatened & Endangered Species (NVDF 2024)
- Nevada Division of Natural Heritage Data and Resources (NVNH 2024)
- Nevada Greater Sage-grouse Conservation Plan (State of NV 2019)
- Oregon Conservation Strategy (ODFW 2016)
- Oregon Department of Fish and Wildlife Oregon Fish Habitat Distribution and Barriers (ODFW 2024a)
- Oregon Spatial Data Library (OSU&SO 2009)
- Soil Survey Geographic Database (SSURGO) (USDA 2024a)
- State of Oregon GEOHub. Oregon Framework Program (State of OR 2000)
- USFS Intermountain Region 4; Humboldt and Toiyabe Forests Special Status Species List (USDA 2016)
- USFS Pacific Northwest Region 6; Fremont-Winema National Forest Special Status Species List (USDA 2021)
- Nevada Department of Wildlife Data Request Form (NVNH 2024)
- USFS Pacific Southwest Region 5 Sensitive Animal Species by Forest (USDA 2013a)
- USFS Region 5 Sensitive Plant Species List (USDA 2013b)
- U.S. Fish and Wildlife Service (USFWS) Critical Habitat for Threatened and Endangered Species (USFWS 2022)
- USFWS National Wetlands Inventory Dataset (USFWS 2024a)
- USFWS Information for Planning and Consultation (IPaC) Trust Resource Report (USFWS 2024b)
- USGS National Hydrography Dataset (USGS 2024a)
- USGS Watershed Boundary Dataset (USGS 2024b)

The USFWS IPaC report was based on a query of the Working Area as shown in Figures 2-1 and 2-2. The CNDDB database was queried for the Working Area as shown on Figures 2-1 and 2-2 plus a 5-mile buffer around the Working Area. Following the database and literature review, Dudek biologists determined the potential for various special-status plant and wildlife species habitat to occur within the Working Area. Determinations were initially based on the known geographic range and nearest occurrence records of species identified in various database searches listed above, and further refined based upon a review of presence, potential presence, and absence of vegetation communities, soil types, suitable habitat, and elevation requirements for these species. No biological field surveys were conducted (e.g., focused surveys for special-status plants or wildlife species, aquatic resources delineation) at this time, since specific treatment areas for feedstock acquisition have yet to be identified and the analysis of this portion of the project is being conducted at the programmatic level. Biological field and technical studies would be completed for specific Sustainable Forest Management Projects as set forth in Section 2.4.

Regional Context

Location

The proposed Working Area consists of primarily federal, state, and private forest lands, within approximately 100 miles of the proposed wood pellet processing facilities in Northern California (Lassen Facility) and Central Sierra Nevada (Tuolumne Facility). The Working Area intersects 863 USGS topographic quads across California, Oregon, and Nevada (USGS 2024c). The Working Area is visually depicted on Figures 2-1 and 2-2 and discussed in further detail below.

Land Ownership

The Working Area in Northern California (Lassen Facility) intersects eight California counties and three Oregon counties (Table 3.3-1). Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity counties comprise a majority of the total area. Land ownership in this portion of the Working Area includes (but is not limited to) the following: private lands, Modoc National Forest, Shasta-Trinity National Forest, Plumas National Forest, and Lassen National Forest. Other land ownership within the Working Area includes (but is not limited to) BLM, BOR, tribal, state, and private lands.

Table 3.3-1. States and Counties in the Northern California Working Area (Lassen Site)

Working Area (Feedstock Acquisition)	State	County
Northern California (Lassen Site)	California	Butte County
		Lassen County
		Modoc County
		Plumas County
		Shasta County
		Siskiyou County
		Tehama County
		Trinity County
	Oregon	Jackson County
		Klamath County
		Lake County

The Working Area in Central Sierra Nevada (Tuolumne Facility) intersects 19 California counties and 3 Nevada counties (Table 3.3-2). Alpine, El Dorado, Fresno, Madera, Mariposa, Mono, Placer, and Tuolumne counties comprise a majority of the total area. Land ownership within this portion of the Working Area includes (but is not limited to) the following: Sierra National Forest, Stanislaus National Forest, private land, Toiyabe National Forest, Eldorado National Forest, and Inyo National Forest. Other land ownership within the Working Area includes (but is not limited to) BLM, BOR, county, state, and tribal lands.

Table 3.3-2. States and Counties in the Central Sierra Nevada Working Area (Tuolumne Site)

Working Area (Feedstock Acquisition)	State	County
Central Sierra Nevada (Tuolumne Site)	California	Alpine County
		Amador County
		Calaveras County
		El Dorado County
		Fresno County
		Madera County
		Mariposa County
		Merced County
		Mono County
		Nevada County
		Placer County
		Sacramento County
		San Joaquin County
		Sierra County
		Stanislaus County
		Sutter County
		Tulare County
		Tuolumne County
		Yuba County
	Nevada	Carson City
		Douglas County
		Washoe County

Ecoregions

The Working Area extends across a significant portion of California, as well as parts of southern Oregon and western Nevada, comprising a variety of habitats, sensitive natural communities, and special-status species that may be unique to a specific ecoregion. An ecoregion typically refers to a specific geographical area characterized by consistent patterns of physical and biological features, such as geology, soils, landform, hydrology, climate, natural community assemblages, terrestrial and aquatic fauna, and land use. Incorporating ecoregions in this section enhances specificity when describing baseline conditions within the expansive Working Area. The ecoregions described below were identified from the EPA's Level III and IV Ecoregions of California, Nevada, and Oregon (EPA 2024).

The Working Area for the pellet processing facility in Northern California/Southern Oregon (Lassen Facility) overlaps eight ecoregions: Cascades, Central Basin and Range, Central California Foothills and Coastal Mountains, Central California Valley, Eastern Cascades Slopes and Foothills, Klamath Mountains/California High North Coast Range, Northern Basin and Range, and Sierra Nevada. The Working Area for the pellet processing facility in Central Sierra Nevada/Western Nevada (Tuolumne Facility) overlaps four ecoregions: Central Basin and Range, Central California Foothills and Coastal Mountains, Central California Valley, and Sierra Nevada. Working Area Ecoregions in the Working Area are summarized in Table 3.3-3, visually depicted on Figure 3.3-1, Working Area - Northern California – Ecoregions, and Figure 3.3-2, Working Area - Central Sierra Nevada – Ecoregions, and described in further detail below.

Table 3.3-3. Proportion of Ecoregions, States, and Counties in the Working Area

Ecoregion/Subregion	Working Area	
	Lassen	Tuolumne
Cascades		
California Cascades Eastside Conifer Forest	5.9%	—
Cascade Subalpine/Alpine	0.3%	—
High Southern Cascades Montane Forest	4.3%	—
Low Southern Cascades Mixed Conifer Forest	10.0%	—
Southern Cascades Foothills	2.2%	—
Subtotal:	*22.8%*	—
Central Basin and Range		
Lahontan and Tonopah Playas	0.1%	—
Sierra Nevada-Influenced High Elevation Mountains	—	<0.1%
Sierra Nevada-Influenced Ranges	<0.1%	0.7%
Sierra Nevada-Influenced Semiarid Hills and Basins	0.7%	1.9%
Sierra Valley	0.2%	—
Subtotal:	*1.0%*	*2.6%*
Central California Foothills and Coastal Mountains		
Camanche Terraces	—	3.1%
Foothill Ridges and Valleys	0.3%	—
Northern Sierran Foothills	0.4%	15.6%
Southern Sierran Foothills	—	6.9%
Tehama Terraces	1.0%	—
Tuscan Flows	3.8%	—
Upper Sacramento River Alluvium	0.3%	—
Subtotal:	*5.8%*	*25.6%*
Central California Valley		
Butte Sink/Sutter and Colusa Basins	0.1%	—
Delta	—	<0.1%
Granitic Alluvial Fans and Terraces	—	0.9%
Lodi Alluvium	—	0.7%
Manteca/Merced Alluvium	—	3.8%
North Valley Alluvium	0.4%	—

Table 3.3-3. Proportion of Ecoregions, States, and Counties in the Working Area

Ecoregion/Subregion	Working Area	
	Lassen	Tuolumne
Northern Terraces	0.7%	6.2%
Sacramento/Feather Riverine Alluvium	0.3%	0.2%
Southern Hardpan Terraces	—	6.3%
Stockton Basin	—	0.7%
Subtotal:	*1.4%*	*18.9%*
Eastern Cascades Slopes and Foothills		
Adin/Dixie Low Hills	1.2%	—
Adin/Horsehead Mountains Forest and Woodland	1.9%	—
Fremont Pine/Fir Forest	6.6%	—
High Elevation Warner Mountains	0.2%	—
Klamath Juniper Woodland/Devils Garden	7.0%	—
Klamath/Goose Lake Basins	6.0%	—
Likely Tableland	0.4%	—
Modoc Lava Flows and Buttes	3.9%	—
Modoc/Lassen Juniper-Shrub Hills and Mountains	3.7%	—
Old Cascades	1.0%	—
Pit River Valleys	2.4%	—
Pumice Plateau	4.6%	—
Pumice Plateau Basins	<0.1%	—
Shasta Valley	1.4%	—
Southern Cascades Slope	1.9%	—
Warner Mountains	2.1%	—
Subtotal:	*44.5%*	—
Klamath Mountains/California High North Coast Range		
Border High-Siskiyous	0.8%	—
Duzel Rock	1.0%	—
Eastern Klamath Low Elevation Forests	3.7%	—
Eastern Klamath Montane Forests	0.7%	—
Inland Siskiyous	0.4%	—
Klamath River Ridges	2.1%	—
Klamath Subalpine	0.4%	—
Marble/Salmon Mountains-Trinity Alps	0.8%	—
Oak Savanna Foothills	0.4%	—
Rogue/Illinois/Scott Valleys	0.4%	—
Scott Mountains	1.8%	—
Serpentine Siskiyous	0.2%	—
Western Klamath Low Elevation Forests	0.2%	—
Subtotal:	*12.8%*	—
Northern Basin and Range		
Barren Playas	0.1%	—

Table 3.3-3. Proportion of Ecoregions, States, and Counties in the Working Area

Ecoregion/Subregion	Working Area	
	Lassen	Tuolumne
High Desert Wetlands	0.4%	—
High Lava Plains	0.8%	—
Pluvial Lake Basins	0.7%	—
Semiarid Uplands	0.3%	—
Subtotal:	*2.3%*	—
Sierra Nevada		
Central Sierra Lower Montane Forests	—	11.5%
Central Sierra Mid-Montane Forests	—	4.8%
Northeastern Sierra Mixed Conifer-Pine Forests	3.6%	3.4%
Northern Sierra Lower Montane Forests	1.7%	0.5%
Northern Sierra Mid-Montane Forests	2.8%	2.4%
Northern Sierra Subalpine Forests	—	3.3%
Northern Sierra Upper Montane Forests	1.3%	9.1%
Sierran Alpine	—	0.7%
Southern Sierra Lower Montane Forest and Woodland	—	4.5%
Southern Sierra Mid-Montane Forests	—	4.5%
Southern Sierra Subalpine Forests	—	3.1%
Southern Sierra Upper Montane Forests	—	5.1%
Subtotal:	*9.4%*	*52.9%*
Total:	**100%**	**100%**

Notes: EPA 2024

Cascades. Contains the southernmost, disjunct portion of a mountain range underlain by volcanics that stretches from west-central Washington through Oregon and into northern California. Much of the region has been affected by alpine glaciation. The ecoregion has a moist, temperate climate that supports an extensive and highly productive coniferous forest. Vegetation includes incense cedar, white fir, and Shasta red fir, and other Sierran species. Jeffrey and ponderosa pines occur at mid-elevation, and subalpine meadows, conifers of whitebark pine and mountain hemlock, and rocky alpine zones occur at high elevations (McNab et al. 2007; Griffith et al. 2016).

Within the Working Area, five Level IV ecoregions are present in the Cascades Level III ecoregion: California Cascades Eastside Conifer Forest; Cascade Subalpine/Alpine; High Southern Cascades Montane Forest; Low Southern Cascades Mixed Conifer Forest; and Southern Cascades Foothills (Table 3.3-3) (EPA 2024).

Central Basin and Range. This internally drained region features north-aligned fault-block ranges separated by drier basins in eastern California and western Nevada. Soils transition from mesic Aridisols at lower elevations to frigid Mollisols higher up. High-elevation mountains contain woodlands, mountain brush, and sporadic open forests, while lower elevations support shrubs, grasses, or are barren. Vegetation includes scattered western spruce-fir forest, juniper woodland, Great Basin sagebrush, and saltbush-greasewood. The ecoregion is generally warmer and drier, with a high proportion of valleys near water sources being used for grazing and irrigated crops (McNab et al. 2007; Griffith et al. 2016).

Within the Working Area, five Level IV ecoregions are present in the Central Basin and Range Level III ecoregion: Lahontan and Tonopah Playas; Sierra Nevada-Influenced High Elevation Mountains; Sierra Nevada-Influenced Ranges; Sierra Nevada-Influenced Semiarid Hills and Basins; and Sierra Valley (Table 3.3-3) (EPA 2024).

Central California Foothills and Coastal Mountains. Contains the foothills and coastal mountains of central California. Most of the region consists of open low mountains or foothills, with some areas of irregular plains and narrow valleys. Bedrock typically originates from sedimentary, granitic, and ultramafic formations. This ecoregion experiences a Mediterranean climate of hot dry summers and cool moist winters. Vegetation primarily includes chaparral and coast live oak woodlands, while some grasslands are found in low elevations and patches of pine at higher elevations. Includes large swaths of ranchland grazed by domestic livestock. Relatively little cultivated land, with the exception of major agricultural centers in some valleys (McNab et al. 2007; Griffith et al. 2016).

Within the Working Area, seven Level IV ecoregions are present in the Central California Foothills and Coastal Mountains Level III ecoregion: Camanche Terraces; Foothill Ridges and Valleys; Northern Sierran Foothills; Southern Sierran Foothills; Tehama Terraces; Tuscan Flows; and Upper Sacramento River Alluvium (Table 3.3-3) (EPA 2024).

Central California Valley. Consists of a low-elevation fluvial plain formed on nonmarine sedimentary rocks in central California. This ecoregion typically experiences a Mediterranean climate with long, hot, dry summers and mild winters. Includes flat valley basins adjacent to the Sacramento and San Joaquin Rivers and fans and terraces surrounding the valley. The two major rivers flow into the Sacramento–San Joaquin River Delta and San Pablo Bay. Historically, vegetation used to be herbaceous, but now more than one-half of the region is cropland, most of which is irrigated (McNab et al. 2007; Griffith et al. 2016).

Within the Working Area, 10 Level IV ecoregions are present in the Central California Valley Level III ecoregion: Butte Sink/Sutter and Colusa Basins; Delta; Granitic Alluvial Fans and Terraces; Lodi Alluvium; Manteca/Merced Alluvium; North Valley Alluvium; Northern Terraces; Sacramento/Feather Riverine Alluvium; Southern Hardpan Terraces; and Stockton Basin (Table 3.3-3) (EPA 2024).

Eastern Cascades Slopes and Foothills. Situated in the rain shadow of the Cascade Range in northeastern California and southern Oregon. This ecoregion experiences a more continental climate characterized by larger temperature fluctuations, reduced rainfall, and frequent fire. Soils are mostly of volcanic origin. Vegetation includes open forests of ponderosa pine, western juniper, and occasional Jeffrey pine at mid-elevations, lodgepole pine and western white pine forest or mountain hemlock and fir forest at higher elevations, and xeric shrubs and grasslands at lower elevations. The landscape is dotted with volcanic cones, plateaus, and buttes. Some areas of farmland and grazing land are found in the lake basins or larger river valleys, which also serve as habitats for migrating waterfowl (McNab et al. 2007; Griffith et al. 2016).

Within the Working Area, 16 Level IV ecoregions are present in the Eastern Cascades Slopes and Foothills Level III ecoregion: Adin/Dixie Low Hills; Adin/Horsehead Mountains Forest and Woodland; Fremont Pine/Fir Forest; High Elevation Warner Mountains; Klamath Juniper Woodland/Devils Garden; Klamath/Goose Lake Basins; Likely Tableland; Modoc Lava Flows and Buttes; Modoc/Lassen Juniper-Shrub Hills and Mountains; Old Cascades; Pit River Valleys; Pumice Plateau; Pumice Plateau Basins; Shasta Valley; Southern Cascades Slope; and Warner Mountains (Table 3.3-3) (EPA 2024).

Klamath Mountains/California High North Coast Range. Encompasses uplifted and dissected ridges, foothills, and valleys of the Klamath and Siskiyou Mountains in California. This area includes rock formations from sedimentary and volcanic origins. Serpentinite and intrusive rocks composed of gabbroic to granodiorite are common. Climate

is characterized by moderately cold winters with heavy snowfall and warm, dry summers with limited rainfall. Vegetation includes mixed Douglas-fir, ponderosa pine, western hardwood and chaparral-mountain shrub (McNab et al. 2007; Griffith et al. 2016).

Within the Working Area, 13 Level IV ecoregions are present in the Klamath Mountains/California High North Coast Range Level III ecoregion: Border High-Siskiyous; Duzel Rock; Eastern Klamath Low Elevation Forests; Eastern Klamath Montane Forests; Inland Siskiyous; Klamath River Ridges; Klamath Subalpine; Marble/Salmon Mountains-Trinity Alps; Oak Savanna Foothills; Rogue/Illinois/Scott Valleys; Scott Mountains; Serpentine Siskiyous; and Western Klamath Low Elevation Forests (Table 3.3-3) (EPA 2024).

Northern Basin and Range. Consists of dissected lava plains, rocky uplands, and alluvial fans amongst scattered mountain ranges in northeastern California and northwestern Nevada. Continental climate with warm to hot, dry summers and cold, dry winters, and little or no precipitation during summer or fall. Vegetation includes juniper woodlands on rugged uplands, and mountain brush, grasses, aspen groves on mountain ranges, and subalpine fir forests at high elevations in Nevada. Most of this ecoregion is used as rangeland (McNab et al. 2007; Griffith et al. 2016).

Within the Working Area, five Level IV ecoregions are present in the Northern Basin and Range Level III ecoregion: Barren Playas; High Desert Wetlands; High Lava Plains; Pluvial Lake Basins; and Semiarid Uplands (Table 3.3-3) (EPA 2024).

Sierra Nevada. Contains mountainous, deeply dissected, and westerly tilting fault block in California and western Nevada. The central and southern part of the region is largely composed of granitic rocks. Due to its varied topography and elevation range, this ecoregion hosts diverse microclimates. Vegetation is mostly ponderosa pine and Douglas-fir at low elevations on the western side, pines and Sierra juniper on the eastern side, and fir and other conifers at higher elevations. Alpine conditions exist at the highest elevations. This ecoregion includes large swaths of publicly owned land (McNab et al. 2007; Griffith et al. 2016).

Within the Working Area, 12 Level IV ecoregions are present in the Sierra Nevada Level III ecoregion: Central Sierra Lower Montane Forests; Central Sierra Mid-Montane Forests; Northeastern Sierra Mixed Conifer-Pine Forests; Northern Sierra Lower Montane Forests; Northern Sierra Mid-Montane Forests; Northern Sierra Subalpine Forests; Northern Sierra Upper Montane Forests; Sierran Alpine; Southern Sierra Lower Montane Forest and Woodland; Southern Sierra Mid-Montane Forests; Southern Sierra Subalpine Forests; and Southern Sierra Upper Montane Forests (Table 3.3-3) (EPA 2024).

Soils and Topography

Elevations in the Working Area for the pellet processing facility in Northern California (Lassen Facility) range from 112 to 14,159 feet above mean sea level (USGS 2024d). Specialty soils present in the Working Area include serpentine and volcanic (Ludington et al. 2005). Loamy-skeletal, fine-loamy, and medial-skeletal are the most prevalent soil textures within this Working Area, and hydric soils[1] comprise a small portion of the total area (USDA 2024a). A majority of soil types in the Northern California/Southern Oregon Working Area are well-drained (USDA 2024a).

[1] Hydric soils are typically associated with wetlands and exhibit characteristic resulting from repeated periods of saturation or inundation for more than a few days. These soils have a hydric rating according to the Natural Resources Conservation Service Soil Survey Geographic Database (SSURGO) (USDA 2024a).

Elevations in the Working Area for the pellet processing facility in Central Sierra Nevada (Tuolumne Facility) range from 0 to 13,152 feet above mean sea level (USGS 2024d). Specialty soils present in the Working Area include serpentine and volcanic (Ludington et al. 2005). Fine-loamy, loamy-skeletal, coarse-loamy, and sandy-skeletal are the most prevalent soil textures within this Working Area, and hydric soils comprise a small portion of the total area (USDA 2024a). A majority of soil types in the Central Sierra Nevada Working Area are well-drained to excessively well-drained (USDA 2024a).

Additional soil and geology information within the Working Area is presented in Section 3.6, Geology and Soils.

Hydrology and Aquatic Resources

According to the USGS National Hydrography Dataset (NHD), the Working Area for the pellet processing facility in Northern California/Southern Oregon (Lassen Facility) intersects 193 watersheds and 69,778 linear miles of streams, rivers, canals, and ditches (USGS 2024a). Watersheds and named streams are presented in Table 1 in Appendix C1. The National Wetland Inventory identifies five types of wetlands or non-wetland waters in this portion of the Working Area: freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, lake, and riverine (USFWS 2024a).

According to the USGS NHD, the Working Area for the pellet processing facility in Central Sierra Nevada/Western Nevada (Tuolumne Facility) intersects 153 watersheds and 74,856 linear miles of streams, rivers, canals, and ditches (USGS 2024a). Watersheds and named streams are presented in Table 1 in Appendix C1. The National Wetland Inventory identifies five types of wetlands or non-wetland waters in this portion of the Working Area: freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, lake, and riverine (USFWS 2024a).

Vegetation Communities and Land Cover Types

The USGS National Land Cover Database (NLCD) land cover layer was utilized to ascertain the habitat and vegetation categories present in the treatable landscape of each ecoregion and, in turn, within the Working Area. Theis NLCD in coordination with the Multi-Resolution Land Characteristics (MRLC) Consortium created the updated land cover database. The MRLC is a consortium of federal agencies who coordinate and generate land cover information at a national scale to provide reliable land cover information. The data from these diverse sources are compiled and consolidated into a unified land cover layer. Standard land cover types were created based on a modified Anderson Level II classification system. The NLCD vegetation layer stands as the most extensive and comprehensive dataset for vegetation mapping within the state.

Land cover within the Working Area consist of a combination of terrestrial non-vegetative land covers, natural vegetation communities[2], and non-natural cover types. There are 16 vegetation communities and land cover types present in the Working Area (Table 3.3-4).

[2] A *plant community* (aka. “community” or “vegetation community”) is a group of plant species living together and linked together by their effects on one another and their responses to the environment they share (CNPS 2023a).

Table 3.3-4. Vegetation Communities and Land Cover Types in the Working Area

Vegetation Communities and Land Cover Types	Estimated Percent Cover in Working Area[1]	
	Northern California	Central Sierra Nevada
Natural	**91.9%**	**80.1%**
Deciduous Forest	0.2%	1.0%
Emergent Herbaceous Wetlands	2.6%	0.5%
Evergreen Forest	43.8%	33.2%
Herbaceous	12.9%	<1%
Mixed Forest	0.3%	1.0%
Open Water	1.3%	2.3%
Perennial Snow/Ice	<1%	<1%
Shrub/Scrub	30.1%	21.8%
Woody Wetlands	0.7%	0.3%
Non-Natural	**8.1%**	**18.7%**
Barren Land	0.7%	0.7%
Cultivated Crops	2.8%	9.5%
Developed, High Intensity	0.1%	0.8%
Developed, Low Intensity	0.5%	1.8%
Developed, Medium Intensity	0.3%	2.1%
Developed, Open Space	1.5%	3.1%
Hay/Pasture	2.2%	0.7%
Not Defined	**<1%**	**1.2%**
Not defined	<1%	1.2%

Source: USGS 2024e.
Note:
1 The Working Area is divided into two subareas based on its proximity to the two proposed processing facilities in Northern California/Southern Oregon and Central Sierra Nevada/Western Nevada.

Sustainable Forest Management Projects (feedstock acquisition) within the Working Area would primarily occur within natural vegetation communities dominated by conifer (commercial timber) species, and generally exclude shrubland, herbaceous, and non-natural land cover types. These excluded cover types generally occur in lower abundance within the Working Area. Table 3.3-4 provides a summary of the vegetation communities and land cover types, including the estimated percentage of vegetative cover, present in the Working Area.

Special-Status Species

Plants and animals may be considered special-status species due to declining populations, vulnerability to habitat change, or restricted distributions. For the purposes of this analysis, special-status species are defined as species that are legally protected or that are otherwise considered sensitive by federal, state, or local resource conservation agencies. These species fall into one or more of the following categories:

Federal

- Species listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register for proposed species) or candidates for possible future listing as threatened or endangered under ESA (75 CFR 69222)

- Species considered sensitive by USFS (as defined by Forest Service Manual [FSM] 2670.31–2670.32)
- Species designated as sensitive by the BLM Nevada State Director (BLM Manual 6840)

State (California)

- Species listed or candidates for listing by the State of California as threatened or endangered under CESA (14 Cal. Code Regs., Section 670.5)
- Animals fully protected under the California Fish and Game Code (FGC) (Section 3511 for birds, Section 4700 for mammals, Section 5050 for reptiles and amphibians, and Section 5515 for fish)
- Plants listed as rare under the California Native Plant Protection Act (FGC Section 1900 et seq.)
- Plants considered by CDFW to be "rare, threatened or endangered in California" (California Rare Plant Ranks of 1A, presumed extinct in California and either rare or extinct elsewhere; 1B, considered rare or endangered in California and elsewhere; 2A, presumed extinct in California but common elsewhere; and 2B, considered rare or endangered in California but more common elsewhere). Note, that while these rankings do not afford the same type of legal protection as ESA or CESA, the uniqueness of these species requires special consideration under Section 15380 of the CEQA Guidelines
- Animals identified by CDFW as species of special concern
- Species considered locally significant, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA Section 15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G)
- Species that otherwise meets the definition of rare or endangered under CEQA Section 15380

Plant taxa considered to be "rare, threatened, or endangered in California" as defined by the California Department of Fish and Wildlife (CDFW) and assigned a California Rare Plant Rank (CRPR). The CDFW system includes six rarity and endangerment ranks for categorizing plant species of concern, as follows:

- **CRPR 1A –** Plants presumed to be extinct in California
- **CRPR 1B –** Plants that are rare, threatened, or endangered in California and elsewhere
- **CRPR 2A –** Plants presumed to be extinct in California, but more common elsewhere
- **CRPR 2B –** Plants that are rare, threatened, or endangered in California, but more common elsewhere
- **CRPR 3 –** Plants about which more information is needed (a review list)
- **CRPR 4 –** Plants of limited distribution (a watch list)

Plants ranked as CRPR 1A, 1B, 2A, or 2B may qualify as endangered, rare, or threatened species within the definition of California Environmental Quality Act (CEQA) Guidelines Section 15380. CDFW recommends that potential impacts to CRPR 1 and 2 species be evaluated in CEQA review documents. In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to CEQA Guidelines Section 15380, but these species may be evaluated on a case-by-case basis.

State (Oregon)

- Fish and wildlife species listed or candidates for listing by the State of Oregon as threatened or endangered (pursuant to ORS 496.171–496.192)

- Plant species listed or candidates for listing by the State of Oregon as threatened or endangered (pursuant to ORS 564.100–564.135)
- Species of greatest conservation concern identified in the Oregon Conservation Strategy

State (Nevada)

- Plant species protected under Title 47, Chapter 527 of the Nevada State Code
- Critically endangered plant species, as well as cacti, under Nevada Revised Statute 527
- Wildlife species protected under Nevada Revised Statute 501
- At-risk taxa in the State of Nevada tracked by the Nevada National Heritage Program (NNHP)
- Nevada Division of Forestry's list of fully protected plant species (a subset of the NNHP data)

Special-Status Plants and Fungi

There are 648 special-status plant or fungus species documented as occurring inside or within 5 miles of the Working Area (CDFW 2024a; USDA 2013b; BLM 2023a; USFWS 2022, 2024b). Of these 648 species, habitat for 5 species is considered absent from the Working Area; these species are identified in Appendix C1, Table 2, but not analyzed further in this Draft EIR. Thus, a total of 643 special-status plant or fungus species have potential to occur within the Working Area based on the presence of suitable habitat associated with the natural vegetation communities identified in Table 3.3-4 (Appendix C1, Table 2). A breakdown of critical habitat for federally listed plant species intersecting the Working Area is presented in Table 3.3-5 below.

Special-Status Wildlife

There are 230 special-status wildlife species documented as occurring inside or within 5 miles of the Working Area (CDFW 2024a; USDA 2013a; USFWS 2022, 2024b). Of these 230 species, habitat for 30 species is considered absent from the Working Area; these species are identified in Appendix C1, Table 3, but not analyzed further. Thus, a total of 200 special-status wildlife species have potential to occur within the Working Area based on the presence of potentially suitable habitat identified in Table 3.3-4 (Appendix C1, Table 3). A breakdown of critical habitat for federally listed wildlife species intersecting the Working Area is presented in Table 3.3-5 below.

Critical Habitat

The Federal Endangered Species Act (FESA) enables USFWS and the National Marines Fisheries Service (NMFS) to designate critical habitat for plant and wildlife species federally listed under FESA as threatened or endangered. Critical habitat is defined as specific geographic areas within the listed species' known range, whether occupied by or not by such species, that contain "physical or biological features (primary constituent elements) essential to the conservation of the species" and that "may require special management considerations or protection" (50 CFR 424.12). Potential adverse effects on designate critical habitat are subject to FESA consultation and analysis that may result in the need for specific permits.

Designated critical habitat for federally-listed plant and species that intersects the Working Area is presented in Table 3.3-5 below.

Table 3.3-5. Designated Critical Habitat for Federally Listed Species in the Working Area

Critical Habitat	Working Area		County(ies)
	Northern California	Central Sierra Nevada	
Plants			
Butte County meadowfoam	X		Butte, Tehama
Colusa grass		X	Mariposa, Merced, Stanislaus, Tuolumne
Fleshy owl's clover		X	Fresno, Madera, Mariposa, Merced, Sacramento, San Joaquin, Stanislaus, Tuolumne
Greene's tuctoria	X	X	Butte, Calaveras, Madera, Mariposa, Merced, Shasta, Stanislaus, Tehama, Tuolumne
Hairy orcutt grass	X	X	Butte, Madera, Mariposa, Merced, Stanislaus, Tehama
Hoover's spurge	X	X	Butte, Merced, Stanislaus, Tehama, Tuolumne
Keck's checker-mallow		X	Fresno
Sacramento Orcutt grass		X	Amador, Sacramento
San Joaquin Orcutt grass		X	Fresno, Madera, Mariposa, Merced
Slender Orcutt grass	X		Lassen, Modoc, Plumas, Sacramento, Shasta, Siskiyou, Tehama
Wildlife			
Bull trout	X		Klamath, Lake
California red-legged frog	X	X	Butte, Calaveras, El Dorado, Nevada, Placer
California tiger salamander		X	Amador, Calaveras, Fresno, Madera, Mariposa, Merced, Sacramento, San Joaquin, Stanislaus
Conservancy fairy shrimp	X	X	Butte, Mariposa, Merced, Tehama
Chinook salmon	X		Butte, Nevada, Sacramento, Shasta, Tehama, Yuba
Green sturgeon	X	X	Butte, Shasta, Tehama, Yuba
Lost River sucker	X		Klamath, Modoc
Northern spotted owl	X		Jackson, Klamath, Shasta, Siskiyou, Trinity
Oregon spotted frog	X		Jackson, Klamath
Owens tui chub		X	Mono
Shortnose sucker	X		Klamath, Modoc
Sierra Nevada bighorn sheep		X	Fresno, Madera

Table 3.3-5. Designated Critical Habitat for Federally Listed Species in the Working Area

Critical Habitat	Working Area		County(ies)
	Northern California	Central Sierra Nevada	
Sierra Nevada yellow-legged frog	X	X	Alpine, Amador, Calaveras, El Dorado, Fresno, Lassen, Madera, Mariposa, Mono, Nevada, Placer, Plumas, Tuolumne
Steelhead	X	X	Butte, Calaveras, Merced, Nevada, Placer, Sacramento, San Joaquin, Shasta, Stanislaus, Sutter, Tehama, Tuolumne, Yuba
Valley elderberry longhorn beetle		X	Sacramento
Vernal pool fairy shrimp	X	X	Amador, Butte, Fresno, Madera, Mariposa, Merced, Placer, Sacramento, San Joaquin, Shasta, Stanislaus, Tehama, Yuba
Vernal pool tadpole shrimp	X	X	Amadro, Butte, Fresno, Madera, Mariposa, Merced, Sacramento, Shasta, Stanislaus, Tehama, Yuba
Webber's ivesia	X	X	Douglas, Lassen, Plumas, Washoe
Yellow-billed cuckoo	X		Butte, Tehama
Yosemite toad		X	Alpine, Fresno, Madera, Mariposa, Mono, Tuolumne

Source: USFWS 2022.

Sensitive Natural Communities

Sensitive natural communities may be of special importance to federal and state agencies and local conservation organizations for a variety of reasons, including their rarity or regionally declining status, or because they provide important habitat to common and special-status plant and wildlife species.

Sensitive natural communities in California are natural communities (of vegetation) or vegetation types that have been evaluated by CDFW using NatureServe's Heritage Methodology (Master et al. 2012) and vegetation community classifications from A Manual of California Vegetation Online, and that are ranked as imperiled or vulnerable. Evaluation is done at both the global (i.e., full natural range within and outside of California) and state (i.e., within California) levels resulting in a "G" (global) and "S" (state) rank ranging from 1 (i.e., very rare and threatened) to 5 (i.e., demonstrably secure). The three levels of S-ranks are considered "sensitive" by CDFW and defined as follows:

- S1 = Critically Imperiled. Critically imperiled in California because of extreme rarity (often 5 or fewer populations) or because of factors such as very steep declines making it especially vulnerable to extirpation.
- S2 = Imperiled. Imperiled in California because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation.
- S3 = Vulnerable. Vulnerable in California due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

CDFW sensitive natural communities identified in the Working Area are presented in Table 4 in Appendix C1.

Within Oregon, sensitive natural communities are areas identified by the Oregon Department of Fish and Wildlife (ODFW) Oregon Conservation Strategy (OCS) as "strategy habitats." Strategy habitats are habitats prioritized within the OCS as areas of greatest conservation concern. There are 11 types of strategy habitats, including aspen woodland, flowing water and riparian habitat, natural lakes, oak woodlands, sagebrush habitats, and wetlands (ODFW 2024b).

Within western Nevada, sensitive natural communities are considered areas of unprotected biodiversity importance (AUBIs). AUBIs are critical for imperiled species throughout the continental U.S., including federally listed species protected by the Endangered Species Act. AUBIs were developed as part of the Map of Biodiversity Importance (MoBI) data collection and delineated by NatureServe using a comprehensive set of habitat models for species considered Critically Imperiled (categorized by NatureServe as "G1"), Imperiled ("G2"), and ESA-listed (i.e., full species listed as Endangered or Threatened under the Endangered Species Act) species in the following four groups: vertebrates (birds, mammals, amphibians, reptiles, freshwater fishes), freshwater invertebrates (mussels and crayfishes), pollinators (bumblebees, butterflies, and skippers), and vascular plants (NatureServe 2024).

Jurisdictional Aquatic Resources

Potentially jurisdictional aquatic resources, including federal and state jurisdictional wetlands and non-wetland waters, occur throughout the Working Area. Aquatic resource types anticipated or known to be present in the Working Area include (but are not limited to): perennial, intermittent, and ephemeral streams or rivers, lakes and ponds, reservoirs and impoundments, freshwater emergent wetlands, seasonal wetlands, and wetland swales. Jurisdictional aquatic resources may be regulated under the federal Clean Water Act, California Fish and Game Code, the state of California Porter-Cologne Water Quality Act, and/or relevant state of Oregon statutes (ORS

196.800–196.990) and water quality standards (see Section 3.3.2, Regulatory Setting, for additional information about the related laws and regulations).

Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration and movement of animals. Wildlife corridors contribute to population viability by assuring continual exchange of genes between populations, providing access to adjacent habitat areas for foraging and mating, and providing routes for recolonization of habitat after local extirpation or ecological catastrophes, such as landslides and fires.

Habitat linkages are patches of native habitat that function to join two larger patches of habitat. They serve as connections between habitat patches and help reduce the adverse effects of habitat fragmentation. Habitat linkages provide a potential route for gene flow and long-term dispersal of plants and animals and may also serve as primary habitat for smaller animals, such as reptiles and amphibians. Habitat linkages may be continuous habitat or discrete habitat islands that function as "steppingstones" for dispersal.

As such, wildlife corridors and habitat linkages are considered sensitive by resource and conservation agencies. The California Essential Habitat Connectivity Project, developed by CDFW and the California Department of Transportation, intends to describe and depict a functional network of connected wildlands that is essential to the continued support of California's diverse natural communities in the face of human development and climate change (Spencer et al. 2010). The Essential Habitat Connectivity Project identifies large, relatively natural habitat blocks within the state that support native biodiversity and depicts the relative permeability of areas to provide some level of ecological connectivity between these habitat blocks.

Wildlife movement corridors in the Working Area are used by a variety of wildlife including small mammals, larger predators such as bobcat, mountain lion, and wolves, ungulates such as deer, big-horn sheep, and elk, and birds. There are 70 designated movement corridors (natural landscape blocks) partially located with forested land where feedstock activities could occur. Refer to Figure 3.3-8, Working Area - Wildlife Connectivity, for a visual depiction of these corridors in the Working Area. The 70 designated natural landscape blocks in the Working Area are presented in Table 6 in Appendix C1.

3.3.1.2 Northern California (Lassen Facility) Site

Biological Resources Technical Studies

Dudek and WRA biologists conducted desktop and field studies of the Lassen Facility site (Table 3.3-6). Dudek biologists surveyed: APN 001-270-86 (about 62 acres) in September 2021; APN 001-270-86 (about 62 acres) and the northern portion of APN 001-270-26 (about 48 acres) in May 2023; and a total of 167 acres in March 2024 (southern portion of APN 001-270-26 and APNs 001-270-29 and 013-040-13). WRA biologists surveyed a total of 260 acres in April 2024 (APNs 001-270-86, 001-270-26, 001-270-29 and 013-040-13). The four APN boundaries at the Lassen Facility site are visually depicted on Figure 2-3, Project Location (Lassen), in Chapter 2. The findings of these studies are summarized in the sections below; refer to Appendices C2, C3, and C4 for additional information such as site location, soils, and hydrology.

Table 3.3-6. Prior Biological Field Surveys and Technical Studies at the Lassen Facility Site

Survey Dates	Consultant	Field Survey Area	Survey Type(s)	Relevant Report(s)
9/21/2021 9/22/2021	Dudek	APN 001-270-86 (northern parcel area)	Biological Field Survey, Vegetation Mapping, Aquatic Resources Delineation	Biological Resources Assessment (Appendix C2)
5/25/2023 5/26/2023	Dudek	APN 001-270-26 (northern portion)	Aquatic Resources Delineation	Aquatic Resources Delineation Report (Appendix C3)
3/14/2024 3/15/2024	Dudek	APNs 001-270-26 (southern portion), 001-270-29 and 013-040-13	Aquatic Resources Delineation	N/A[1]
4/29/2024 4/30/2024	WRA	APNs 001-270-86, 001-270-26, 001-270-29, and 013-040-13	Aquatic Resources Delineation	Aquatic Resources Delineation Report (Appendix C4)

Note:
[1] N/A: not applicable. Dudek field notes/data from March 14–15, 2024, were used by WRA to complete the field delineation of Assessor's Parcel Numbers 001-270-86, 001-270-26, 001-270-29, and 013-040-13 on April 29-30, 2024 (see Appendix C4).

Vegetation Communities and Land Covers

Two vegetation communities and one land cover type were documented within the Lassen Facility site: Ashy ryegrass - Creeping wildrye turfs, Kentucky bluegrass - Redtop - Creeping bentgrass meadows, and disturbed habitat (Table 3.3-7). Refer to the Biological Resources Assessment in Appendix C2 for additional information regarding the on-site vegetation communities. In addition, Figure 3.3-3, Lassen Facility - Vegetation Communities and Land Cover Types, visually depicts vegetation communities and land cover types at the Lassen Facility site.

Table 3.3-7. Vegetation Communities and Land Cover Types at the Lassen Facility Site

Vegetation Community and Land Cover Type	Vegetation Alliance and CDFW Alliance Code or FRAP Cover Type	Rarity Rank	Acreage				
			001-270-86	001-270-26	001-270-29	013-040-13	Total
Vegetation Communities							
Great Basin Grassland	Ashy ryegrass - Creeping wildrye turfs *(Leymus cinereus - Leymus triticoides* Herbaceous Alliance; 41.081.00	S3, G3	26.41	102.80	3.59	88.81	221.61
Seasonal Wetland	Kentucky bluegrass - Redtop - Creeping bentgrass meadows (*Poa pratensis - Agrostis gigantea - Agrostis stolonifera*); Herbaceous Semi-Natural Alliance; 45.107.00	NA, NA	24.79	21.34	0.04	1.22	47.39
Other Land Cover Types							
Disturbed Habitat	NA	NA, NA	10.90	—	—	—	10.90
		Total:	**62.11**	**124.14**	**3.62**	**90.03**	**279.91**

Notes: NA: not applicable. State (S) ranks of 1-3 are considered highly imperiled by CDFW (2024d). G3 – vulnerable.

Special-Status Species

Special-Status Plants

Based on a review of relevant literature and agency databases, 17 special-status plant species are known to occur in the general region of the Lassen Facility site. However, based on a field assessment of the suitability of on-site vegetation communities to support these species, the potential of any of these species to occur on site were determined to either be low, due to the poor quality of available habitat on the site, or not expected to occur due to the lack of suitable habitat, the lack of documented occurrences near the site, and/or the site being outside of the species' known geographic or elevation range. Additional information on special-status plant species life history and the potential occurrence is provided in Appendix C2.

Special-Status Wildlife

Based on a review of relevant literature and agency databases, 15 special-status wildlife species are known to occur in the general region of the Lassen Facility site. However, based on a field assessment of the suitability of on-site vegetation communities to support these species, the potential of any of these species to occur on site were determined to either be low, due to the poor quality of available habitat on the site, or not expected to occur due to the lack of suitable habitat, the lack of documented occurrences near the site, or due to the site being outside of the species' known geographic or elevation range.

The site does provide some habitat for nesting birds protected by the federal MBTA and the California Fish and Game Code (CFGC). Additional information on special-status wildlife species life history and the potential occurrence is provided in Appendix C2.

Critical Habitat

There is no designated or proposed critical habitat for federally listed plant or wildlife species mapped within the Lassen Facility site.

Sensitive Natural Communities

Great Basin grassland is identified as a sensitive vegetation community considered highly imperiled by CDFW (CDFW 2024d; CNPS 2023a). Refer to the Biological Resources Assessment in Appendix C2 for more details.

Jurisdictional Aquatic Resources

Dudek and WRA conducted field delineations of the site in 2021, 2023, and 2024 (refer to Table 3.3-6 above for specific field dates and survey areas), to identify and characterized on-site aquatic resources and their potential subject to be regulated under Sections 401 and 404 of the Clean Water Act, Porter–Cologne Water Quality Control Act, and Section 1602 of the California Fish and Game Code.

Dudek and WRA biologists delineated approximately 2.13 acres (5,833 linear feet) of non-wetland waters and 40.65 acres of wetlands potentially subject to USACE, RWQCB, and/or CDFW jurisdiction (Table 3.3-8). Findings with regard to federal jurisdiction are preliminary until verified by the Sacramento District of the USACE. Refer to the Aquatic Resources Delineation Report in Appendix C3 for additional information regarding aquatic resources present on the site. In addition, Figures 3.3-4A and 3.3-4B, Lassen Facility - Aquatic Resources, visually depicts aquatic resources delineated at the Lassen Facility site.

Table 3.3-8. Potential Jurisdictional Aquatic Resources at the Lassen Facility Site

Aquatic Resource	Acres by APN				Total
	001-270-26	001-270-29	001-270-86	013-040-13	
Non-Wetland Waters					
Drainage ditch	0.27	—	1.86	—	**2.13**
Wetlands					
Seasonal Wetland	12.32	0.04	26.47	1.22	**40.06**
Seasonal Wetland Swale	0.16	—	0.10	0.33	**0.59**
Total[1]	**12.76**	**0.04**	**28.43**	**1.55**	**42.78**

Source: Dudek 2023 (Appendix C3) and WRA 2024a (Appendix C4).
Notes:
1 Acreages extend to the ordinary high-water mark or top of bank, whichever is greater. OHWM and TOB were determined to be equivalent for non-wetland waters at this site.
2 Minor discrepancies in totals are the result of rounding differences between Excel and ArcMap.

Wildlife Corridors and Habitat Linkages

The southern half of the Lassen Facility site is within the outside edge of the Beaver Creek Rim/Indian Mountain – Little Hot Spring Valley essential connectivity area, as defined by the California Essential Habitat Connectivity (CEHC) project (Spencer et al. 2010). This site was formerly part of a wood processing sawmill. The buildings from the prior use are located north of the site. The BNSF Railroad forms the eastern boundary of the site. An agricultural chemical company (Helena Agri-Business) and two residences are located west of the site. Agricultural land is located to the east and south. Most of the lands adjacent to the site are under Williamson Act contracts.

3.3.1.3 Central Sierra Nevada (Tuolumne Facility) Site

Biological Resources Technical Studies

Dudek biologists conducted desktop and field studies for the Tuolumne Facility site (Table 3.3-9). The findings of these studies are summarized in the sections below; refer to Appendices C5 and C6 for additional information such as site location, soils, and hydrology.

Table 3.3-9. Prior Biological Technical Studies at the Tuolumne Facility Site

Date	Consultant	Survey Type(s)	Relevant Report(s)
12/10/2020	Dudek	Biological Field Survey, Vegetation Mapping, Aquatic Resources Delineation	Biological Resources Assessment (Appendix C5) Aquatic Resources Delineation Report (Appendix C6)
5/17/2021	Dudek	Rare Plant Survey, Bat Roost Assessment, CRLF Site Assessment	
3/31/2023	Dudek	Aquatic Resources Delineation, Vegetation Mapping, CRLF Site Assessment	

Vegetation Communities and Land Covers

Six vegetation communities and two land cover types were documented within the Tuolumne Facility site (Table 3.3-10). Refer to the Biological Resources Assessment in Appendix C5 for additional information regarding the on-site vegetation communities. In addition, Figure 3.3-5, Tuolumne Facility - Vegetation Communities and Land Cover Types, visually depicts vegetation communities and land cover types at the Tuolumne Facility site.

Table 3.3-10. Vegetation Communities and Land Cover Types at the Tuolumne Facility Site

Vegetation Community and Land Cover Type	Vegetation Alliance and CDFW Alliance Code	Rarity Rank	Acreage
Vegetation Communities			
Annual Grassland	Annual brome grasslands *(Avena* spp. - *Bromus* spp.*)* Herbaceous Semi-Natural Alliance; 42.027.00	NA, NA	42.70
Blue Oak Woodland	Blue oak (*Quercus douglasii*) Forest and Woodland Alliance; 71.020.00	S4, G4	0.86
Riparian Woodland	Fremont cottonwood (*Populus fremontii – Salix laevigata, lasiolepis, lucida* ssp. *lasiandra*) Forest and Woodland Alliance; 61.130.00	S3, G4	0.25
Spikerush Marsh	Common spikerush - beaked spikerush marshes (*Eleocharis* (*palustris*, *rostellata*)) Alkaline-Saline Alliance; 45.260.03	S3, G3	0.69
Riparian Scrub	Himalayan blackberry - rattlebox - edible fig riparian scrub (*Rubus armeniacus - Sesbania punicea - Ficus carica*) Semi-Natural Alliance; 63.906.00	NA, NA	0.02
Cattail Marsh	Cattail marshes (*Typha* (*angustifolia*, *domingensis*, *latifolia*)) Alliance; 52.050.04	S5, G5	0.08
Other Land Cover Types			
Disturbed	NA	NA, NA	12.44
Open Water	NA	NA, NA	0.13
		Total:	**57.19**

Notes: NA: not applicable. State (S) ranks of 1-3 are considered highly imperiled by CDFW (2024d). G3 – vulnerable; G4 – apparently secure; G5 – secure.

Special-Status Species

Special-Status Plants

Based on a review of relevant literature and agency databases, 35 special-status plant species are known to occur in the general region of the Tuolumne Facility site. However, based on a field assessment of the suitability of on-site vegetation communities to support these species, 28 of these species are not expected to occur on the site due to the lack of suitable habitat, the lack of documented occurrences near the site, and/or the site being outside of the species' known geographic or elevation range. The remaining seven special-status plant species have a varied potential to occur on the site: Beaked clarkia (*Clarkia rostrate),* Tuolumne button-celery (*Eryngium pinnatisectum*), spiny-sepaled button-celery (*Eryngium spinosepalum*), Stanislaus monkeyflower (*Erythranthe marmorata*), forked hare-leaf (*Lagophylla dichotoma),* veiny monardella (*Monardella venosa),* and Patterson's navarretia (*Navarretia paradoxiclara*). Of these, three species are considered to have a low potential to occur and thus, no impacts to

these species are anticipated. Three of the remaining special-status plant species (Tuolumne button-celery, spiny-sepaled button-celery, and Patterson's navarretia) have a moderate to high potential to occur in the vernal pool on-site; however, none of these species were identified during the May 2021 rare plant survey, conducted when these species would be evident and identifiable. Three populations of Stanislaus monkeyflower (CRPR 1B.1 species) were mapped growing in spikerush marsh and cattail marsh the northern portion of the site. Additional information on special-status plant species is provided in Appendix C5.

Special-Status Wildlife

Based on a review of relevant literature and agency databases, 27 special-status wildlife species are known to occur in the general region of the Tuolumne Facility site. However, based on a field assessment of the suitability of on-site vegetation communities to support these species, 20 of these species are not expected to occur on the site due to the lack of suitable habitat, the lack of documented occurrences near the site, and/or the site being outside of the species' known geographic or elevation range. The remaining seven special-status wildlife species have a varied potential to occur on the site: California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), northwestern pond turtle (*Emys marmorata*), tricolored blackbird (*Agelaius tricolor*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western red bat (*Lasiurus blossevillii*). Northwestern pond turtles were observed basking in the northern portion of the site during the field surveys in 2021 and 2023. In addition, the site provides habitat for nesting birds protected by the federal MBTA and the California Fish and Game Code (CFGC), as well as other roosting bat species protected by the CFGC. Additional information on special-status wildlife species is provided in Appendix C5.

Critical Habitat

There is no designated or proposed critical habitat for federally-listed plant or wildlife species mapped within the Tuolumne Facility site.

Sensitive Natural Communities

Spikerush marsh and riparian woodland are identified as sensitive vegetation communities considered highly imperiled by CDFW (CDFW 2024d; CNPS 2023a). In addition, riparian vegetation communities associated with aquatic resources are assumed to be under the jurisdiction of CDFW pursuant to Section 1602 of the California Fish and Game Code. Refer to the Biological Resources Assessment in Appendix C5 for the occurrence and description of riparian habitat within the Tuolumne Facility site.

The Red Hills Recreation Management Area is a BLM-designated Area of Critical Environmental Concern (ACEC) located approximately 0.5 to 1 mile north of the Tuolumne Facility site. This ACEC is situated in a geologically distinct area dominated by serpentine soils that supports a unique assemblage of plant species. Several rare and endemic plant and wildlife species are known to occur in aquatic resources or upland areas within the ACEC, including Red Hills roach (*Lavinia symmetricus*), Red Hills ragwort (*Senecio clevelandii* var. *heterophyllus*), and Red Hills vervain (*Verbena californica*). Additionally, this area provides important overwintering habitat for bald eagles.

Jurisdictional Aquatic Resources

Dudek conducted a field delineation on December 10, 2020 and March 31, 2023, to identify aquatic resources within the Tuolumne Facility site potentially subject to regulations in Sections 401 and 404 of the Clean Water Act, Porter–Cologne Water Quality Control Act, and Section 1602 of the California Fish and Game Code.

Dudek biologists delineated 7.614 acres (2,221 linear feet) of non-wetland waters and 1.855 acres of wetlands potentially subject to USACE, RWQCB, and/or CDFW jurisdiction (Table 3.3-11). In addition, approximately 1 acre of riparian woodland was mapped as a CDFW-only aquatic resource. Because CDFW regulates from bank to bank, certain portions of the review area where the top of bank extended beyond the OHWM are subject to regulation by CDFW as lake or streambed. Findings with regard to federal jurisdiction are preliminary until verified by the Sacramento District of the USACE. Refer to the Aquatic Resources Delineation Report in Appendix C6 for additional information regarding aquatic resources present on the site. In addition, Figures 3.3-6A and 3.3-6B, Tuolumne Facility - Aquatic Resources, visually depicts aquatic resources delineated at the Tuolumne Facility site.

Table 3.3-11. Potential Jurisdictional Aquatic Resources at the Tuolumne Facility Site

Aquatic Resource	Acres[1]	Linear Feet
Non-Wetland Waters		
Channel – Natural, Ephemeral 1	0.030	271
Channel – Natural, Ephemeral 2	0.023	97
Channel – Natural, Ephemeral 3	0.018	176
Channel – Natural, Intermittent 1	0.369	1056
Channel – Natural, Intermittent 2	0.031	143
Ditch – Drainage 1	0.010	124
Ditch – Drainage 2	0.052	220
Ditch – Drainage 3	0.041	40
Pond – Perennial	2.191	—
Detention Basin 1	1.810	—
Detention Basin 2	2.204	—
Detention Basin 3	0.706	—
Detention Basin 4	0.127	—
Subtotal	*7.614*	*2,221*
Wetlands		
Freshwater Emergent Wetland 1	0.246	—
Freshwater Emergent Wetland 2	1.363	—
Seasonal Wetland 1	0.082	—
Seasonal Wetland 2	0.019	—
Seasonal Wetland 3	0.031	—
Seasonal Wetland 4	0.009	—
Seasonal Wetland 5	0.012	—
Vernal Pool	0.093	—
Subtotal	*1.855*	—
Riparian		
Riparian Woodland	0.999	—
Total	**10.470**	**2,221**

Notes:
1 Acreages extend to top of bank.
2 Minor discrepancies in totals are the result of rounding differences between Excel and ArcMap.

Wildlife Corridors and Habitat Linkages

The Tuolumne Facility site is not within an essential connectivity area, natural landscape block, or natural area, as defined by the CEHC project (Spencer et al. 2010). This site is partially developed with existing structures and other features generally concentrated within the center of the site The Red Hills Recreation Management Area located approximately 0.60 miles east of the site is designated as a natural Landscape Block connecting the unique soils and habitats of the region to the aquatic habitat of the Don Pedro Reservoir to the south. The riparian and wetland habitat and associated wetland and drainage at the northern portion of the Tuolumne Facility site provide a movement corridor and safe undercrossing of La Grange Road for local wildlife such as deer, racoon, skunk, opossum, fox, coyote, and mountain lion.

3.3.1.4 Port of Stockton

Biological Resources Assessment

To better understand the biological resources associated with the dedicated, purpose-built export terminal at the Port of Stockton Dudek conducted a biological resources assessment of the area at the Port where wood pellets would be transported and stored prior to overseas shipment. The assessment included a review of pertinent online and literature sources as well as a field survey of the project area. The literature review consisted of compiling and reviewing the following online databases and reports: the USFWS IPaC Trust Resource Report (USFWS 2024b), CDFW California Natural Diversity Database (CNDDB) (CDFW 2024a), the CNPS online Inventory of Rare and Endangered Vascular Plants (CNPS 2023b), San Joaquin County Multi-Species Habitat Conservation Plan (SJMSCP) species lists (SJCOG 2000) and draft incidental take minimization measures (ITMMs) (SJCOG 2016), the Draft and Final Environmental Impact Reports for the West Complex Development Plan (Port of Stockton 2003, 2004), and the Addendum to the West Complex Development Plan Environmental Impact Report (Port of Stockton 2021a). The IPaC report was based on a query for the Port site boundary as shown on Figure 3.3-7, Port of Stockton - Biological Resources. The CNDDB and CNPS databases were queried for the nine USGS 7.5-minute quadrangles containing and immediately surrounding the Port site (Manteca, Lathrop, Stockton West, Stockton East, Lodi South, Waterloo, Union Island, Terminous, Holt). Following a review of these resources, Dudek biologists determined whether habitat for special-status plant and wildlife species was present in the vicinity (within 1 mile of the Port site). Initial determinations were based on a review of habitat types, soils, and elevation preferences, as well as the known geographic range and nearest occurrence records of each species.

The field assessment involved biologists conducting a field survey of the Port site on August 31, 2023. The study area for the field survey consisted of approximately 19 acres within the 123-acre Port site as determined by the May 2023 site layout. The boundary of the Port site and study area are visually depicted on Figure 3.3-7. The purpose of the field survey was to identify and characterize the study area, with particular focus on existing vegetation communities that could serve as potential habitat for special-status species. The field survey also included a preliminary aquatic resources delineation to identify aquatic resources potentially subject to regulations in Sections 401 and 404 of the Clean Water Act, Porter–Cologne Water Quality Control Act, and Section 1602 of the California Fish and Game Code. No focused or protocol-level surveys for special-status plants or wildlife species were conducted. A general habitat assessment for giant gartersnake (*Thamnophis gigas*) was conducted, but no other focused or protocol-level surveys for conducted for special-status wildlife. The results of the biological resources assessment are summarized in the sections below.

Site Description

Location

The Port site is located on Rough and Ready Island (APN 16203007) in the Delta and the City of Stockton, California within the northern San Joaquin Valley. Topography within the site is generally flat with elevations ranging from mean sea level to approximately 15 feet above mean sea level. The site is generally bounded by warehouses and roads, including Boone Drive, Davis Avenue, and Edwards Avenue. A portion of the Stockton Deepwater Channel (i.e., San Joaquin River) flows through the northern extent of the site. The site is located at approximately 37° 57.0532' north latitude and 121° 21.2769' west longitude.

Soils

Based on a review of appropriate soils maps, two soil mapping units were identified within the Port site study area: Egbert-Urban land complex, partially drained, 0 to 2 percent slopes and urban land (USDA 2024b). Surficial topsoil is characterized by deep, poorly-drained, and fine textured soils that contain a high percentage of organic materials and formed in floodplains. Additional soil and geology details within the Port site are presented in Section 3.6.

Hydrology

The Port site is located within the San Joaquin Delta watershed (Hydrologic Unit Code 18040003), which drains approximately 1,230 square miles of land in San Joaquin County. The USFWS NWI classifies the adjacent Stockton Deepwater Channel as an excavated, permanently flooded-tidal river with an unconsolidated bottom (R1UBVx) (USFWS 2024a). There are no aquatic resources mapped by the NWI within the Port site (USFWS 2024a; USGS 2024a). The NWI dataset is based on coarse aerial mapping without ground-truthing and is unlikely to identify less apparent, small, and/or seasonal features.

Vegetation Communities and Land Covers

Based on publicly accessible mapping data for the region (FRAP 2015; California Gap Analysis 2002), and on the biological field survey that was conducted, there are three vegetation communities or land covers occurring at the Port site: disturbed, riparian woodland, and urban/developed. These communities/cover types are adapted from CDFW's Vegetation by Wildlife Habitat Relationship Type (CDFW 2024c), visually depicted on Figure 3.3-7, and discussed below.

Disturbed. Disturbed areas at the Port site are associated with two undeveloped lots. Dominant species include ripgut brome (*Bromus diandrus*), mouse barley (*Hordeum murinum*), fiddleneck (*Amsinckia* sp.), and field bindweed (*Convolvulus arvensis*), with intermittent patches of johnsongrass (*Sorghum halepense*) growing along adjacent roadsides. There are planted Holm oak (*Quercus ilex*) trees present along the north side of Davis Avenue. Regular disking in this land cover is apparent in aerial photos since the early 2000s based on the presence of distinct, uniform vertical ruts throughout the site in most years (Google Earth Pro 2023). There is one seasonal wetland within this land cover on the west side of Lipes Drive.

Riparian Woodland. There are two patches of riparian woodland present at the Port site. This vegetation community is associated with a culvert/drainage crossing below Lipes Drive. The woodland contains a dense tree canopy composed of Pecan (*Carya illinoinensis*) and Holm oak (*Quercus ilex*) and moderately dense to dense understory of

Himalayan blackberry (*Rubus armeniacus*) and Siberian pea shrub (*Caragana arborescens*). This vegetation community is dominated by non-native and invasive species indicative of disturbance.

Urban. Urban land cover at the Port site consists of developed hardscape such as existing warehouses, paved roads and parking lots, and material storage yards.

Special-Status Species

Special-Status Plants

Based on a review of relevant literature and agency databases, 22 special-status plant species are known to occur in the region of the Port site. However, based on a field assessment of the suitability of on-site vegetation communities to support these species, the potential of any of these species to occur on site were determined to either be low, due to the poor quality of available habitat on the site, or not expected to occur due to the lack of suitable habitat, the lack of documented occurrences near the site, and/or the site being outside of the species' known geographic or elevation range. These species are identified in Table 5 in Appendix C1 but not analyzed further.

Special-Status Wildlife

Based on a review of relevant literature and agency databases, 35 special-status wildlife species are known to occur in the region of the Port site. However, based on a field assessment of the suitability of on-site vegetation communities to support these species, the potential of 27 of these species to occur on site were determined to either be low, due to the poor quality of available habitat on the site, or not expected to occur due to the lack of suitable habitat, the lack of documented occurrences near the site, or due to the site being outside of the species' known geographic or elevation range. These species are identified in Table 6 in Appendix C1 but not analyzed further. There is potential habitat for the remaining 8 special-status wildlife species. These species are listed in Table 3.3-12 and addressed in more detail following this table.

Table 3.3-12. Special-Status Wildlife Species With Some Potential to Occur Within or Adjacent to the Port Site

Scientific Name	Common Name	Status (Fed/State/Other)
Acipenser medirostris pop. 1	green sturgeon - southern DPS	FT/None/SJCOG
Athene cunicularia	burrowing owl	BCC/SSC/SJCOG
Buteo swainsoni	Swainson's hawk	None/ST/SJCOG
Elanus leucurus	white-tailed kite	None/FP/SJCOG
Hypomesus transpacificus	Delta smelt	FT/SE/SJCOG
Lanius ludovicianus	loggerhead shrike	None/SSC/SJCOG
Oncorhynchus mykiss irideus pop. 10	steelhead – Central Valley DPS	FE/None/None
Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall/late fall-run ESU	None/SSC/None

Status Abbreviations
FE: Federally listed as endangered
FT: Federally listed as threatened
BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern
SSC: California Species of Special Concern
FP: California Fully Protected Species

SE: State listed as endangered
SJCOG: Species is covered by the San Joaquin County Multi-Species Habitat Conservation Plan
ST: State listed as threatened

Green Sturgeon - Southern DPS. Green sturgeon is a federally threatened species and SJCOG covered species that could occur in the Stockton Deepwater Channel (San Joaquin River) adjacent to the Port site. Green sturgeon could use the Stockton Deepwater Channel to migrate through the region but would not be expected to remain for prolonged periods as there are no suitable spawning or rearing habitat present. There are 2 CNDDB occurrences of this species within 5 miles of the Port site (CDFW 2024a). The Stockton Deepwater Channel adjacent to the Port site is mapped as critical habitat for green sturgeon (refer to Figure 3.3-7).

Burrowing Owl. Burrowing owl is a state species of special concern and SJCOG covered species that could occur at the Port site. Although no active burrow complexes were identified on site during the field survey, this species is known to occupy highly disturbed sites and may nest in constructed features such as downspouts, storm drains, or similar. There are 12 CNDDB occurrences of this species within 5 miles of the Port site (CDFW 2024a).

Swainson's Hawk. Swainson's hawk is a state threatened species and SJCOG covered species that could nest in trees adjacent to the Port site. Although Holm oak trees on the Port site provide low quality nesting habitat for Swainson's hawk, large trees along the Stockton Deepwater Channel and the vicinity could support nesting. The site lacks suitable foraging habitat for Swainson's hawk due to the general lack of rodent activity and limited undisturbed grassland or agricultural habitat surrounding the site. There are 38 CNDDB occurrences of this species within 5 miles of the Port site (CDFW 2024a).

White-tailed Kite. White-tailed kite is a state species of special concern and SJCOG covered species that could nest in trees adjacent to the Port site. Although Holm oak trees on the Port site provide low quality nesting habitat for white-tailed kite, riparian trees along the Stockton Deepwater Channel could support nesting. There are no CNDDB occurrences of this species within 5 miles of the Port site (CDFW 2024a).

Delta Smelt. Delta smelt is a federally and state listed species and SJCOG covered species that could occur in the Stockton Deepwater Channel (San Joaquin River) adjacent to the Port site. Delta smelt could use the Stockton Deepwater Channel to migrate through the region but would not be expected to remain for prolonged periods as there are no suitable spawning or rearing habitat present. There is 1 CNDDB occurrence of this species within 5 miles of the Port site (CDFW 2024a). The Stockton Deepwater Channel is mapped as critical habitat for Delta smelt (refer to Figure 3.3-7).

Loggerhead Shrike. Loggerhead shrike is a state species of special concern that could occur in the vicinity of the Port site. Trees and riparian vegetation on or adjacent to the Port site could provide nesting habitat for loggerhead shrike. There are no CNDDB occurrences of this species within 5 miles of the Port site (CDFW 2024a).

Steelhead – Central Valley DPS. Central Valley steelhead is a federally endangered species that could occur in the Stockton Deepwater Channel (San Joaquin River) adjacent to the Port site. Steelhead could use the Stockton Deepwater Channel to migrate through the region but would not be expected to remain for prolonged periods as there are no suitable spawning or rearing habitat present. There are 2 CNDDB occurrences of this species within 5 miles of the Port site (CDFW 2024a). The Stockton Deepwater Channel adjacent to the Port site is mapped as critical habitat for steelhead (refer to Figure 3.3-7).

Chinook Salmon – Central Valley fall/late fall-run ESU. Central Valley Chinook salmon is a state species of special concern that could occur in the Stockton Deepwater Channel (San Joaquin River) adjacent to the Port site. Chinook

salmon could use the Stockton Deepwater Channel to migrate through the region but would not be expected to remain for prolonged periods as there are no suitable spawning or rearing habitat present. There are no CNDDB occurrences of this species within 5 miles of the Port site (CDFW 2024a).

Other Protected Species

In addition to the 8 special-status wildlife species described above, the Port site and adjacent areas contain habitat for native bats protected by CFGC, common and migratory bird species protected by MBTA and FCG, and marine mammals.

Native Bats. Bat species that are naturally occurring in the state are protected by Section 4150 of the California Fish and Game Code (CFGC). Bats may use a variety of features for roosting, including trees with sufficient foliage, pealing bark, and cavities, and bridges, buildings, and other structures. No roosting features with bat sign (e.g., urine staining, guano, insect droppings) were identified during the field survey; however, a focused survey for bats was not conducted. Bats could potentially roost in riparian trees or buildings in the vicinity of the Port site and forage along the Stockton Deepwater Channel (San Joaquin River) adjacent to the site.

Nesting Birds. The Port site provides suitable nesting habitat for numerous local and migratory bird or raptor species protected by the federal MBTA and CFGC. Specifically, trees, shrubs, and human-made structures and buildings on the site provide suitable nesting habitat. No active bird nests were observed during the biological field survey, but a focused survey for nests was not conducted.

Harbor Seal (*Phoca vitulina*). Harbor seals, protected by the Marine Mammal Protection Act, are known to occur in the Stockton Deepwater Channel (San Joaquin River) adjacent to the Port site. Their presence in the region of the Port site is transitory as there are no haul-out sites near the Port site. Habitat adjacent to the site is relatively low quality for harbor seals due to high vessel traffic and disturbed conditions in the Stockton Deepwater Channel.

Critical Habitat

The Stockton Deepwater Channel (San Joaquin River) adjacent to the Port site is mapped as designated critical habitat for steelhead (Central Valley DPS), Delta smelt, and green sturgeon (southern DPS) (Figure 3.3-7).

Sensitive Natural Communities

There are no natural communities identified as sensitive by CDFW within the Port site.

Jurisdictional Aquatic Resources

There is one seasonal wetland and two drainage ditches at the Port site (see Figure 3.3-7). The seasonal wetland contains vegetation distinct from the surrounding land, and evidence of seasonal inundation or saturation is apparent in winter/spring aerial photos (Google Earth Pro 2023). This feature had been mowed at the time of the August biological field survey. Where identifiable, plant species identified in the feature included (*Festuca perennis*), seaside barley (*Hordeum marinum*), mouse barley (*Hordeum murinum*), tall flatsedge (*Cyperus eragrostis*), and curly dock (*Rumex crispus*). The two drainage ditches convey run-off from adjacent development and roadways, including Boone Drive and Lipes Drive. Riparian vegetation grows along the drainage ditch that flows below Lipes Drive.

Wildlife Corridors and Habitat Linkages

The Port of Stockton site is not within an essential connectivity area, natural landscape block, or natural area, as defined by the CEHC (Spencer et al. 2010). The Stockton Deepwater Channel (San Joaquin River) is located adjacent to the Port site. The San Joaquin River is a migratory corridor for native fish and wildlife, such as salmonids and harbor seals. The Port of Stockton site is also within the Pacific flyway, an established air route of waterfowl and other birds migrating between wintering grounds in Central and South America and nesting grounds in Pacific Coasts states and provinces of North America.

3.3.2 Regulatory Setting

3.3.2.1 Federal

Federal Endangered Species Act

FESA (16 USC 1531 et seq.), as amended, is administered by USFWS, National Oceanic and Atmospheric Administration, and National Marine Fisheries Service (NMFS). This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend, and provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. As part of this regulatory act, FESA provides for designation of Critical Habitat, defined in FESA Section 3(5)(A) as specific areas within the geographical range occupied by a species where physical or biological features "essential to the conservation of the species" are found and that "may require special management considerations or protection." Critical Habitat may also include areas outside the current geographical area occupied by the species that are nonetheless "essential for the conservation of the species." Under provisions of Section 9(a)(1)(B) of FESA, it is unlawful to "take" any FESA-listed species. "Take" is defined in Section 3(19) of FESA as, harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct. Federal regulations found in 50 Code of Federal Regulations Section 17.3 further defines the term " harm" to mean any act that actually kills or injures a federally listed species, including significant habitat modification or degradation.

Section 7(a)(2) of FESA directs federal agencies to consult with USFWS for any actions they authorize, fund, or carry out that may jeopardize the continued existence of any listed species or result in the destruction or adverse modification of federally designated Critical Habitat. Consultation begins when the federal agency submits a written request for initiation to USFWS or NMFS, along with the agency's Biological Assessment of its proposed action (if necessary), and USFWS or NMFS accepts that sufficient information has been provided to initiate consultation. If USFWS or NMFS concludes that the action is not likely to adversely affect a listed species, the action may be conducted without further review under FESA. Otherwise, USFWS or NMFS must prepare a written Biological Opinion describing how the agency's action will affect the listed species and its Critical Habitat.

Marine Mammal Protection Act

The Marine Mammal Protection Act of 1972 (MMPA), as amended, establishes a federal responsibility for the protection and conservation of marine mammal species by prohibiting the "take" of any marine mammal. The MMPA defines "take" as the act of hunting, killing, capture, and/or harassment of any marine mammal, or the attempt at such. The MMPA also imposes a moratorium on the import, export, or sale of any marine mammals, parts, or products within the United States. USFWS and NOAA Fisheries are jointly responsible for implementation of the MMPA; USFWS is responsible for the protection of sea otters, and NOAA Fisheries is responsible for protecting pinnipeds (seals and sea lions) and cetaceans (whales and dolphins).

Under Section 101(a)(5)(D) of the MMPA, an incidental harassment permit may be issued for activities other than commercial fishing that may impact small numbers of marine mammals. An incidental harassment permit covers activities that extend for periods of not more than 1 year, and that will have a negligible impact on the impacted species. Amendments to the MMPA in 1994 statutorily defined two levels of harassment. Level A harassment is defined as any act of pursuit, torment, or annoyance that has the potential to injure a marine mammal in the wild. Level B harassment is defined as harassment having potential to disturb marine mammals by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50, Section 10.13 of the Code of Federal Regulations. The MBTA is an international treaty for the conservation and management of bird species that migrate through more than one country and is enforced in the United States by the U.S. Fish and Wildlife Service. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50, Section 20 of the Code of Federal Regulations. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors). In 2017, the Department of Interior issued Memorandum M-37041 expressing the legal opinion that the MBTA prohibits both intentional and incidental take (take incidental to a lawful activity) of bird species.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC 668 et seq.) provides for the protection of both bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*). Specifically, the act prohibits take of eagles, which is defined as any action that would "pursue, destroy, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb" bald and golden eagles, including parts, nests, or eggs. The term "disturb" is further defined by regulation as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, injury to an eagle, a decrease in productivity, or nest abandonment" (50 CFR 22.3). Under the Bald and Golden Eagle Protection Act, it is also illegal to "sell, purchase, barter, trade, import, or export, or offer for sale, purchase, barter, or trade, at any time or in any manner, any bald eagle or any golden eagle, or the parts, nests, or eggs" of these birds. Pursuant to 50 CFR 22.26, and as of the latest amendment to the act in December 2016, a permit may be obtained that authorizes take of bald eagles and golden eagles where the take is "compatible with the preservation of the bald eagle and the golden eagle; is necessary to protect an interest in a particular locality; is associated with, but not the purpose of, the activity; and cannot practicably be avoided."

Clean Water Act

The Federal Water Pollution Control Act of 1972 (Clean Water Act) (33 USC 1251 et seq.), as amended by the Water Quality Act of 1987 (PL 100-4), is the major federal legislation governing water quality. The purpose of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." The definition of what constitutes "waters of the United States" (provided in 33 CFR Section 328.3(a)) has changed multiple times over the past 36 years starting with the United States v. Riverside Bayview Homes, Inc. court ruling in 1985. Subsequent court proceedings, rule makings, and congressional acts in 2001 (Solid Waste Agency of North Cook County v. United States Army Corps of Engineers), 2006 (Rapanos v. United States), 2015 (Waters of the United States [WOTUS] Rule), 2018 (suspension of the WOTUS Rule), and 2019 (formal repeal of the WOTUS Rule) have attempted to provide greater clarity to the term and its regulatory implementation. The most recent Navigable Waters Protection Rule (NWPR), issued by the U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE) in January 2020, defined "waters of the United States" to include the following four

categories: (1) the territorial seas and traditional navigable waters; (2) tributaries of such waters; (3) certain lakes, ponds, and impoundments of jurisdictional waters; and (4) wetlands adjacent to other jurisdictional waters (other than waters that are themselves wetlands). However, this rule was remanded and vacated with the August 2021 decision in Pasqua Tribe et al v United States Environmental Protection Agency. As a result, the current administration is evaluating a new rulemaking process. In the meantime, the EPA and USACE have halted implementation of the NWPR nationwide and will revert to and apply the CWA 1986 definition and the 2008 Rapanos guidance, informally referred to as "the pre-2015 regulatory regime", until further notice. The term "wetlands" (a subset of waters) is defined in 33 CFR Section 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." Discharges into waters of the United States and wetlands are regulated under Section 404 by the USACE.

Important applicable sections of the Clean Water Act are as follows:

- Section 401 requires an applicant for any federal permit for an activity that may result in a discharge of pollutants into waters of the United States to obtain certification from the state that the activity complies with all applicable water quality standards, limitations, and restrictions. Section 401 water quality certification is provided by the RWQCB and typically include conditions to minimize impacts on water quality.
- Section 402 establishes the National Pollutant Discharge Elimination System, a permitting system for municipal and industrial discharges of any pollutant (except for dredge or fill material) into waters of the United States. The National Pollutant Discharge Elimination System program establishes limits on allowable concentrations and mass emissions of pollutants contained in point source and non-point source discharges. This program is administered by the RWQCB. Conformance with Section 402 is typically addressed in conjunction with water quality certification under Section 401.
- Section 404 provides for issuance of permits for the discharge of dredge or fill material into waters of the United States, including wetlands, by USACE. Two types of permits are issued by the USACE under Section 404: General Permits and Individual Permits. General Permits, which authorize groups activities with minimal impacts to an aquatic environment, can include Nationwide Permits, Regional General Permits, and Programmatic General Permits. Individual Permits are issued for projects that could cause significant impacts to an aquatic environment and require a lengthier public review process.

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act of 1976 (FLPMA), as amended, serves as the legal framework for the management of public lands by the Bureau of Land Management (BLM). According to Section 102 (a) (7) and (8) of the act, the United States establishes policies regarding the management of public lands, emphasizing multiple use and sustained yield unless otherwise specified by law.

FLPMA requires the establishment of goals and objectives as guidelines for public land use planning, and mandates that management follows the principles of multiple use and sustained yield, unless stated otherwise by law (Section 102[7]). Section 103(c) defines "multiple use" as the responsible management of public lands and their diverse resources in a way that optimally meets the current and future needs of the American people. This involves making efficient use of the land for one or more of these resources or related services, allowing flexibility for adjustments as needs and conditions change. It includes utilizing some land for specific resources while ensuring a balanced and diverse range of uses that consider the long-term requirements of future generations for renewable

and nonrenewable resources. These resources encompass recreation, grazing, timber, minerals, water sources, fish and wildlife, as well as natural scenic, scientific, and historical values. The regulation emphasizes the importance of coordinating and harmonizing the management of these resources without permanently damaging the land's productivity or environmental quality. It further emphasizes the need to consider the relative values of the resources, rather than solely focusing on the combination of uses that yield the highest economic return or output per unit.

Both Section 202(f) and Section 309(e) emphasize the importance of providing adequate notice and opportunities for federal, state, and local governments, as well as the public, to comment on the development of standards and criteria, as well as to participate in the formulation and execution of plans and programs for public land management.

Bureau of Land Management Directive System

The Bureau of Land Management Directive System serves as a guiding tool for the administration and management of BLM-administered land. The system is regularly updated to reflect new policies, procedures, and technological advancements. The system includes permanent directives, temporary directives, and emergency notifications, each serving a specific purpose with its own set of guidelines. BLM manuals contain policy and procedures for managing programs, defining the basic authority for tasks, and identifying responsibilities. BLM manuals relevant to biological resources include (but are not limited to) the following:

- Forest Management Manuals, 5000 Series
- Specially Designated Conservation Area and Wildlife Manuals, 6000 Series
- Soil, Water, and Air Management Manuals, 7000 Series

National Forest Management Act

The National Forest Management Act of 1976 and its implementing regulations (CFR 219) state that: "fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area (Sec 219.19)." Sec 219.19 also calls for the use of management indicator species to indicate the effects of management activities. In addition, the Secretary of Agriculture's policy on fish and wildlife (Department Regulation 9500-4) directs the USFS to avoid actions "which may cause a species to become threatened or endangered."

U.S. Forest Service Directive System

The Forest Service Directive System, comprising a collection of manuals and handbooks, serves as a guiding tool for the administration and management of national forests and grasslands. The Forest Service Manual (FSM) is a comprehensive document that contains the legal authorities, objectives, policies, responsibilities, instructions, and guidance to plan and execute USFS assigned programs and activities. The purpose of the FSM is to guide the agency and manage national forests and grasslands. Forest Service Handbooks serve as the main resource for detailed guidance and instructions to implement the directives given in the manual. Relevant sections of the FSM are presented below.

Wildlife Management

USFS policy for wildlife management across all USFS land is contained in FSM 2670 (USFS 2005). Current management direction for sensitive species and threatened or endangered species is outlined in the FSM. FSM 2670 directs USFS to prepare and implement management practices that maintain viable populations of sensitive and desired non-native species; do not cause a sensitive species to become threatened or endangered; do not cause adverse effects on threatened or endangered species; and establish interagency objectives for habitat management and/or recovery of populations.

FSM 2670.22 and 2670.32 ensure that species habitat is well distributed, potential species effects from USFS actions are avoided or minimized, and USFS actions do not result in a loss of viability or create significant trends toward federal listing. All programs and activities must be reviewed under the National Environmental Policy Act (NEPA) to assess potential effects on USFS sensitive species, and monitoring and inventory of these species must be conducted during project planning.

Fisheries Management

USFS policy for fisheries management across all USFS land is contained in FSM 2600 (USFS 1994). Current management direction for sensitive species and threatened or endangered species is outlined in the FSM. FSM 2600 directs USFS to prepare and implement management practices that maintain viable populations of sensitive and desired non-native species, do not cause a sensitive species to become threatened or endangered, do not cause adverse effects on threatened or endangered species, and establish interagency objectives for habitat management and/or recovery of populations.

Sensitive Plant Management

USFS policy for sensitive plant management across all forest service land is contained in FSM 2609 and 2670 (USFS 1994). Current management direction for sensitive species and threatened or endangered species is outlined in the FSM. FSM 2609 includes direction regarding sensitive plant surveys, population records, plant collections, and conservation assessments and strategies for sensitive plant resources. FSM 2670 provides management guidance for threatened, endangered, and sensitive plants on USFS land that complies with relevant federal laws and regulations.

Noxious Weed Management

USFS policy for noxious/invasive weed management across all forest service land is contained in FSM 2900 (USFS 2011). Goals for noxious weed management are to manage weeds using an integrated weed management approach according to the objectives set forth in FSM 2902, which consist of prevention, early detection and rapid response, control and management, restoration, and organizational collaboration.

Forest Service Stewardship Contracting

The USFS has been granted authority to implement stewardship contracting through several key statutes and regulations:

- **Section 604 (16 USC 6591c) of Public Law 108-148:** This law, as amended by Section 8205 of Public Law 113-79 (the Agricultural Act of 2014) and Section 207(a) of Public Law 115-141 (Consolidated Appropriations Act, 2018), grants the USFS and the BLM permanent authority to enter into stewardship

contracts or agreements. The goal is to achieve land management objectives for the National Forests or public lands that meet local and rural community needs. This authority supersedes the temporary authority granted to the Forest Service in Section 347 of Public Law 105-277, the Omnibus Consolidated and Emergency Appropriations Act, 1999.

- **36 CFR § 223 Subpart I Stewardship End Result Contracting Projects:** This federal regulation was established to implement the stewardship authority in 16 USC 6591c.
- **Tribal Forest Protection Act of 2004:** This act authorizes the Secretaries of Agriculture and Interior to give special consideration to tribally proposed stewardship contracting projects on agency lands bordering or adjacent to trust land.

These statutes and regulations guide the USFS in their stewardship contracting efforts, which include activities to improve, maintain, or restore forest or rangeland health; restore or maintain water quality; improve fish and wildlife habitat; and reduce hazardous fuels that pose risks to communities and ecosystem values.

3.3.2.2 State – California

California Endangered Species Act

CDFW administers the California Endangered Species Act (CESA) (California Fish and Game Code [CFGC], Section 2050 et seq.), which prohibits the take of plant and animal species designated by the California Fish and Game Commission as endangered, candidate, or threatened in the State of California. Under CESA Section 86, take is defined as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA Sections 2080 through 2085 address the taking of threatened, endangered, or candidate species by stating, "no person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided in this chapter, the Native Plant Protection Act (CFGC Sections 1900–1913), or the California Desert Native Plants Act (Food and Agricultural Code, Section 80001)."

Sections 2081(b) and (c) of the CFGC authorize take of endangered, threatened, or candidate species if take is incidental to otherwise lawful activity and if specific criteria are met. In certain circumstances, Section 2080.1 of CESA allows CDFW to adopt a federal incidental take statement or a 10(a) permit as its own, based on its findings that the federal permit adequately protects the species and is consistent with state law. A Section 2081(b) permit may not authorize the take of "Fully Protected" species, "specially protected mammal" species, and "specified birds" (CFGC Sections 3505, 3511, 4700, 4800, 5050, 5515, and 5517). If activities are planned in an area where a Fully Protected species, specially protected mammal, or a specified bird occurs, CDFA and WS-California must take precautions to avoid take.

California Fish and Game Code

Fully Protected Species

Sections 3511, 4700, 5050, and 5515 of the CFGC outline protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected by these sections may not be taken or possessed at any time. CDFW cannot issue permits or licenses that authorize the "take" of any fully protected species, except under certain circumstances, such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock. On July 10, 2023, Senate Bill 147 (SB147) was signed

into law and amends the Fish and Game Code to allow a 10-year permitting mechanism for a defined set of projects within the renewable energy, transportation, and water infrastructure sectors. Furthermore, it is the responsibility of the CDFW to maintain viable populations of all native species. Toward that end, the CDFW has designated certain vertebrate species as Species of Special Concern, because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

Lake and Streambed Alteration Program

Under Sections 1602-1616 of the CFGC, CDFW regulates activities that would substantially divert or obstruct the natural flow of or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake. CDFW also regulates work that would deposit or dispose of debris, water, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses (including dry washes) and lakes characterized by the presence of (1) definable bed and banks and (2) existing fish or wildlife resources. In practice, CDFW marks its jurisdictional limit at the top of the stream or lake bank or the outer edge of the riparian vegetation, where present, and sometimes extends its jurisdiction to the edge of the 100-year floodplain. Because riparian habitats do not always support wetland hydrology or hydric soils, wetland boundaries, as defined by Clean Water Act Section 404, sometimes include only portions of the riparian habitat adjacent to a river, stream, or lake. Therefore, jurisdictional boundaries under 1602-1616 may encompass a greater area than those regulated under Clean Water Act Section 404; CDFW does not have jurisdiction over ocean or shoreline resources.

Resident and Migratory Birds

Section 3503 of the CFGC prohibits the needless destruction of nests or eggs of native bird species, and Section 3503.5 of the CFGC states that no birds in the orders of Falconiformes or Strigiformes (birds of prey) can be taken, possessed, or destroyed. For the purposes of these state regulations, CDFW currently considers an active nest as one that is under construction or in use and includes existing nests that are being modified. For example, if a hawk is adding to or maintaining an existing stick nest in a transmission tower, then it would be considered to be active and covered under these CFGC Sections. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA.

Non-Game Mammals

Section 4150 of the CFGC states a mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a non-game mammal. A non-game mammal may not be taken or possessed under this code. All bat species occurring naturally in California are considered non-game mammals and are therefore prohibited from take.

California Native Plant Protection Act

The Native Plant Protection Act of 1977 (CFGC Sections 1900–1913) directed CDFW to carry out the legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The Native Plant Protection Act gave the Fish and Game Commission the power to designate native plants as "endangered" or "rare," and prohibited take, with some exceptions, of endangered and rare plants. When CESA was amended in 1984, it expanded on the original Native Plant Protection Act, enhanced legal protection for plants, and created the categories of "threatened" and "endangered" species to parallel FESA. The 1984 amendments to CESA also made the exceptions to the take prohibition set forth in Section 1913 of the Native Plant Protection Act applicable to plant

species listed as threatened or endangered under CESA. CESA categorized all rare animals as threatened species under CESA, but did not do so for rare plants, which resulted in three listing categories for plants in California: rare, threatened, and endangered. The Native Plant Protection Act remains part of the California Fish and Game Code, and mitigation measures for impacts to rare plants are specified in a formal agreement between CDFW and project proponents.

Sensitive Natural Communities

Section 1940 of the California Fish and Game Code requires CDFW to develop and maintain a vegetation mapping standard for the state. More than half of the vegetation communities in the state have been mapped through the Vegetation Classification and Mapping Program. Natural communities with ranks of S1–S3 are considered by CDFW as sensitive natural communities to be addressed in the environmental review processes of CEQA and its equivalents. Sensitive natural communities are communities that have a limited distribution and are often vulnerable to the environmental effects of projects. These communities may or may not contain special-status species or their habitats.

Porter-Cologne Water Quality Control Act

The intent of the Porter–Cologne Water Quality Control Act is to protect water quality and the beneficial uses of water, and it applies to both surface water and groundwater. Under this law, the State Water Resources Control Board develops statewide water quality plans, and the RWQCBs develop basin plans that identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. All waters of the state are regulated under the Porter–Cologne Water Quality Control Act, including isolated waters that are no longer regulated by USACE. Recent changes in state procedures require increased analysis and mitigation. Developments with impact to jurisdictional waters of the state must demonstrate compliance with the goals of the act by developing stormwater pollution prevention plans, standard urban stormwater mitigation plans, and other measures to obtain a Clean Water Act, Section 401 certification and/or Waste Discharge Requirement.

California's Marine Invasive Species Act

According to California's Marine Invasive Species Act, initially established in 1999 and later amended in September 2003, vessels operating within the state's waters must adhere to specific measures to minimize the release of nonindigenous species from their ballast water, anchors, anchor chains, and hulls. Many vessels are obligated to either perform ballast water exchange at sea, retain their ballast water onboard, or employ alternative methods for the treatment and management of their ballast water. By 2005, regulations will be implemented to govern the management of ballast water for vessels arriving from the Pacific Coast Region. Moreover, regulations will be introduced for experimental on-board ballast water treatment systems, followed by the establishment of performance standards for the discharge of ballast water into the state's waters. The Act currently mandates ballast water reporting, and the State Lands Commission is tasked with sampling ballast water and sediment from 25 percent of incoming vessels subject to the Act. The Act outlines the procedures for data collection, stipulates associated fees, and prescribes civil and criminal penalties. Up until January 1, 2010, state entities are prohibited from imposing requirements that deviate from those specified in the Act, unless federal law necessitates such action.

California Federal Bay Delta Program

The Sacramento San Joaquin Delta holds a pivotal position within California, serving as the linchpin of the state's water supply system. It is also a region of immense ecological significance, particularly for salmon, migratory waterfowl, and a diverse array of plants and animals.

The CALFED program, a collaboration between state and federal entities concerning water usage, was officially established in June 1994 when a Framework Agreement was signed by the relevant state and federal agencies overseeing the Bay-Delta Estuary. This agreement committed these agencies to working together in formulating water quality standards, coordinating operations of the State Water Project and Central Valley Project, and devising long-term solutions to address issues in the Bay-Delta Estuary.

The CALFED program has laid out a series of ecosystem restoration objectives that pertain to the Sacramento San Joaquin Delta, as outlined below:

- Aid in the recovery of endangered native species or contribute to their restoration.
- Restore natural processes in a manner that favors native species.
- Sustain and enhance key populations critical for economic, recreational, and sporting purposes.
- Safeguard and rehabilitate functional habitats, encompassing aquatic, upland, and riparian areas, to promote the flourishing of species.
- Mitigate the adverse impacts of invasive species and prevent further introductions that compete with and harm native species.
- Enhance and maintain water and sediment quality to better support the health of the ecosystem and facilitate the prosperity of species.

Z'berg-Nejedly Forest Practice Act

While the proposed project does not involve commercial timber removal, the Z'berg-Nejedly Forest Practice Act (Forest Practice Act) could still be relevant for identifying methods and procedures that protect fish, wildlife, forests, and streams in areas where treatment activities in the Working Area might take place. The Forest Practice Act aims to achieve sustained timber production while considering values such as recreation, watershed protection, wildlife, and economic vitality (PRC Section 4513[b]). The regulations under this act specify factors like harvest area size and location, measures to protect remaining trees, and safeguards for riparian areas, water courses, lakes, wildlife, and habitat areas.

3.3.2.3 State – Oregon

Oregon State Listed Species

Oregon Revised Statutes (ORS): Consultation with the Oregon Department of Fish and Wildlife (ODFW) and/or Oregon Department of Agriculture is required when species that are state listed as threatened or endangered are determined to occur on a project site. State-listed fish and wildlife species are regulated by the ODFW in ORS 496.171 to 496.192. State-listed plants are regulated by the Oregon Department of Agriculture in ORS 564.100 to 564.135. Wildlife "take" is defined under state law as to kill or obtain possession or control of. Plant "take" is defined under state law as to collect, cut, damage, destroy, dig, kill, pick, remove or otherwise disturb. The Oregon

Department of Agriculture has responsibility for the conservation of non-threatened and endangered plant species through the Native Plant Conservation Program.

Oregon Conservation Strategy: Through the development of the Oregon Conservation Strategy, the ODFW has identified key issues for conserving fish and wildlife species (ODFW 2016). As a part of this strategy, species of greatest conservation concern were identified along with the habitats that are essential to those species. Conservation Opportunity Areas were identified to help focus future conservation efforts. Identification of these areas is provided to help land managers and decision makers with information to make decisions on where to focus development and conservation efforts.

Oregon Removal/Fill Law

The Oregon Department of State Lands (ODSL) regulates wetlands and waters under the Removal-Fill Law (Oregon Revised Statutes [ORS] 196.800–196.990). Generally, removal for fill within wetlands over 50 cubic yards requires a Removal-Fill Permit, applied through a Joint Permit Application which reaches ODSL, USACE, and Oregon Department of Environmental Quality (ODEQ). The jurisdictional limits of DSL-regulated resources extends either to the ordinary high water line or to the edge of the wetland/upland boundary, whichever is higher, on non-tidal streams. The mapping of the jurisdictional extent of DSL wetlands absent an ordinary high water line follow the USACE three-parameter wetlands definition. However, it should be noted that the extents of USACE and DSL jurisdiction on certain features do not always coincide.

Oregon Water Quality Standards

Under Section 401 of the CWA (described in Section 3.3.2.1, Federal, above), ODEQ has the authority to manage aquatic resources and water quality, including stormwater and groundwater. Oregon's water quality standards are outlined in the Oregon Administrative Rules (OAR) Chapter 340, Division 41. A WQC includes conditions that require the applicant to follow certain best management practices (BMPs) and perform monitoring to ensure that water quality standards are met. If there are unavoidable impacts to waterways and/or wetlands as a result of a project, the applicant is required to provide mitigation for the loss of water quality functions. Applicants may either submit a mitigation plan or purchase mitigation credits from an approved mitigation bank. In addition, the ODEQ has adopted a 50-foot buffer requirement around waters of the state. Impacts within the 50-foot buffer require compensation such as buffer enhancement.

Projects affecting waters of the state that do not fall under federal jurisdiction are not subject to the CWA Section 401 WQC. However, they are still subject to other applicable state water quality and environmental protection laws.

3.3.2.4 State – Nevada

Nevada Revised Statutes (NRS) and Nevada Administrative Code (NAC)

Water Controls and Quality Standards: NRS 445A.118 to 445A.2234 define and describe requirements for "waters of the state" and "water quality standards."

Protection of Lake Tahoe Watershed: NRS 445A.170 states that it is unlawful for any person, firm, association or corporation to: (a) Construct a pier, breakwater or marina in or to alter the shoreline of Lake Tahoe; (b) Remove gravel, sand or similar material from Lake Tahoe; or (c) Deposit any fill or deleterious material in Lake Tahoe,

without first having secured written permission from the State Department of Conservation and Natural Resources. NRS 445A.175 prohibits discharge of waste

Title 45 – Wildlife: Chapter 501 NRS 501.001 – 501.395 defines general provisions and details the roles and regulations of the Board of Wildlife Commissioners, county advisory board to manage wildlife, Department of Wildlife, and enforcement and penalties of those statutes.

Chapter 503 Hunting, Fishing, and Trapping; Miscellaneous Protective Measures – NAC 503.0001 -503.820 detail general provisions; classification and taking of wildlife; possession, transportation, importation, exportation and release of wildlife; hunting and trapping; raptors; fishing, competitive field trials; wildlife depredation; and dredging permits. For example, NAC 503.050 protects migratory birds and their nests (with eggs or young). Most sections of this chapter will not be applicable to project activities but may provide pertinent definitions and lists to be considered.

Title 47 – Forestry; Forest Products and Flora: Chapter 527 NRS 527.010 - 527.330 stipulates protection and preservation of timbered lands, trees and flora. The Nevada list of Critically Endangered Native Flora Species NRS 527.260 – 527.300 provides for the conservation, protection, restoration and propagation of selected species of flora and for the perpetuation of habitats of such species

Chapter 555 – Control of Insects, Pests, and Noxious weeds. NAC 555.005 - 555.810 define and describe requirements for noxious weed and pest control.

The Wild Free-Roaming Horses and Burros Act of 1971 (Public Law 92-195; 43 CFR Section 4700)

Through The Wild Free-Roaming Horses and Burros Act has been amended by Congress since 1971 and reproduced by BLM in 2006. The act represents Congress' declaration that:

> wild free-roaming horses and burros are living symbols of the historic and pioneer spirit of the West; that they contribute to the diversity of life forms within the Nation and enrich the lives of the American people; and that these horses and burros are fast disappearing from the American scene. It is the policy of Congress that wild free-roaming horses and burros shall be protected from capture, branding, harassment, or death; and to accomplish this they are to be considered in the area where presently found, as an integral part of the natural system of the public lands.

The purpose of Part 4700 – Protection, Management, and Control of Wild Free- Roaming Horses and Burros is to implement the laws relating to the protection, management, and control of wild horses and burros under the administration of the BLM. The H-4700-1 – Wild Horses and Burrows Management Handbook describes the authorities, objectives, policies and procedures that guide the management of WH&B on the public lands administered by the BLM.

2019 Nevada Greater Sage-grouse Conservation Plan

The Nevada Greater Sage-grouse Conservation Plan provides guidance on Nevada State's goals for the long-term conservation of sage-grouse. Greater sage-grouse (*Centrocercus urophasianus*; hereafter, sage-grouse) is a historically and culturally significant species in the State of Nevada. Protection of the sage-grouse is accomplished through the protection of the sagebrush ecosystem upon which the species depends. The plan states that redundant, representative, and resilient populations of sage-grouse will be maintained through amelioration of

threats; conservation of key habitats; mitigation for loss of habitat due to anthropogenic disturbances; and restoration or rehabilitation of habitat degraded or lost due to Acts of Nature.

3.3.2.5 Bi-State – Tahoe Basin

Tahoe Regional Planning Agency

The Tahoe Regional Planning Agency (TRPA) was established in 1969 as a result of a bi-state agreement between California and Nevada and ratified by the U.S. Congress. The primary responsibility of TRPA is to protect environments of the Lake Tahoe basin by implementing land use regulations, such as those identified in the Lake Tahoe Regional Plan. The Regional Plan serves as a regulatory framework encompassing various initiatives and documents. This document incorporates the Bi-State Compact requirements, the environmental thresholds, related plans and legal mandates, and input from the public. The Regional Plan offers a coordinated and integrated direction for TRPA's regulatory Code of Ordinances and implementation programs. Provisions of the TRPA Code of Ordinances regarding biological resources that may be applicable to the proposed project are summarized below.

Protection and Management of Vegetation

The Code of Ordinances mandates the preservation and maintenance of all native vegetation types. Chapter 74, titled Vegetation Protection and Management, in the TRPA Code of Ordinances outlines the safeguarding measures for vegetation in Stream Environment Zones (SEZs), including common, uncommon, and sensitive plants. An SEZ, as defined by TRPA, is a region whose biological and physical attributes are due to the existence of surface or groundwater. This term encompasses areas within the Tahoe Basin that are influenced by near-surface water, such as perennial, intermittent, or ephemeral streams, as well as meadows and marshes. Any project or activity within an SEZ is prohibited unless it is for habitat enhancement, dispersed recreation, vegetation management, or as stipulated in Chapter 20, Land Coverage Standards, of the Code of Ordinances. If necessary, TRPA can mandate the development and execution of a remedial vegetation management plan for maintaining or achieving environmental thresholds. Furthermore, Chapter 77, Revegetation, lays out the guidelines for revegetation initiatives.

Protection of Sensitive and Uncommon Plants

Chapter 75, titled Sensitive and Uncommon Plant Protection and Fire Hazard Reduction, in the TRPA Code of Ordinances, sets forth guidelines for the conservation and management of sensitive and uncommon plant species and their habitats, which are further discussed in Environmental Threshold Carrying Capacities, below. Any projects or activities that pose a threat to these sensitive plants or their habitats must take full measures to mitigate their significant negative impacts. The protective measures for these sensitive plants and their habitats include:

- Erecting fences to protect individual species or habitats
- Limiting access or usage intensity
- Altering the project design as needed to avoid adverse impacts
- Allocating open space to encompass entire areas of suitable habitat
- Restoring disturbed habitat

Tree Removal

TRPA oversees the management of forest resources in the Tahoe Basin with the aim of achieving and maintaining environmental thresholds for species and structural diversity, promoting the long-term health of these resources, and creating and maintaining suitable habitats for a variety of wildlife species. The TRPA Code of Ordinances provides guidelines for tree removal in Chapter 30, Design Standards; Chapter 65, Vegetation Protection During Construction; Chapter 71, Tree Removal; Chapter 75, Sensitive and Uncommon Plant Protection and Fire Hazard Reduction; and Chapter 77, Revegetation.

Tree removal requires review and approval by TRPA. Project proponents are required to obtain a permit from TRPA for the removal of live trees with a diameter at breast height (DBH) greater than 14 inches. However, trees of any size identified as a fire hazard by a fire protection district or fire department operating under a memorandum of understanding with TRPA can be removed without a separate tree permit.

Trees with a DBH greater than 30 inches must be preserved, except under circumstances specified in the TRPA Code of Ordinances. As per Sections 71 and 71.2.B of the Code of Ordinances, within the non-SEZ urban area, individual trees larger than 30 inches DBH that are healthy and sound will be retained as desirable specimen trees with aesthetic and wildlife value, unless: (1) all reasonable alternatives to retain the tree are not feasible, including reducing parking areas or modifying the original design; or (2) paragraphs 71.2.A(1), 71.2.A(2), 71.2.A(3), 71.2.A(7), 71.2.A(8), or 71.2.A(9) can be applied.

Furthermore, trees and vegetation not scheduled for removal must be protected during construction as per Chapter 65, Vegetation Protection During Construction, of the TRPA Code of Ordinances.

Wildlife

TRPA establishes guidelines for the conservation and management of wildlife habitats, with a particular focus on enhancing or increasing habitats of notable importance, such as deciduous trees, wetlands, meadows, and riparian areas (TRPA Code of Ordinances, Chapter 78). The specific habitats under protection include riparian areas, wetlands, and SEZs; corridors for wildlife movement and migration; known bat roosts; crucial habitats for any species of concern; essential habitats for the survival of any species; nesting habitats for raptors and waterfowl; fawning habitats for deer; and snags and coarse woody debris. Moreover, TRPA's special-interest species (also known as "threshold species"), which hold local significance due to their rarity or public interest, and species listed under the ESA or CESA are shielded from habitat disturbances caused by conflicting land uses.

TRPA special-interest wildlife species consist of northern goshawk (*Accipiter gentilis*), osprey (*Pandion haliaetus*), bald eagle, golden eagle, peregrine falcon (*Falco peregrinus anatum*), mule deer (*Odocoileus hemionus*), and waterfowl species.

Fish Resources

Chapter 79, Fish Resources, in the TRPA Code of Ordinances, includes measures for protecting fish habitat and improving degraded fish habitat. For instream habitats, these measures include prohibiting alterations to stream channels, facilitating fish movement at stream crossings, removing obstacles to fish movement, mitigating the impacts of development on fish habitats, maintaining instream flows, preventing sediment from entering the stream system, and promoting native vegetation cover.

The emphasis of fisheries management in the Conservation Element of TRPA's Goals and Policies is on maintaining essential habitats. The primary goal of the fisheries Conservation Element is to "enhance aquatic habitats crucial for the growth, reproduction, and continuation of existing and threatened fish resources in the Lake Tahoe Basin." For streams within the Tahoe Basin, the management focus is on the quality and quantity of habitat provided for fish species, including spawning and rearing habitats, food supply, and cover. The Conservation Element outlines the following five attainment policies related to instream fish habitat:

- Development proposals impacting streams, lakes, and adjacent lands will assess impacts on the fishery.
- Unnatural obstructions and other barriers to fish movement will be banned and removed where appropriate.
- Projects aimed at improving habitats in streams and lakes will be promoted.
- Instream flows will be maintained or enhanced.
- Efforts by state and federal agencies to reintroduce the Lahontan cutthroat trout will be supported.

Environmental Threshold Carrying Capacities

TRPA thresholds have been established for water quality, air quality, scenic resources, soil conservation, fish, vegetation, wildlife, noise, and recreation. TRPA is not allowed to approve projects that would cause a significant adverse effect on a threshold area without suitable mitigation. The TRPA thresholds that may apply to the proposed project are listed below.

V-1—Common Vegetation

Increase plant and structural diversity of forest communities through appropriate management practices as measured by diversity indices of species richness, relative abundance, and pattern by using the following indicators:

- Provide for the perpetuation of yellow pine forest, red fir forest, subalpine forest, shrub associations, sagebrush scrub, deciduous riparian, meadow associations, wetland associations, cushion plant association;
- Maintain at least 4 percent meadow and wetland vegetation, 4 percent deciduous riparian vegetation;
- Maintain no more than 25 percent dominant shrub vegetation;
- Maintain 15-25 percent of the yellow pine forest in seral stages other than mature;
- Maintain 15-25 percent of the red fir forest in seral stages other than mature;
- Limit acreage size of new forest openings to no more than 8 acres; and
- Ensure that adjacent forest openings are not of the same relative age class or successional stage.

V-2—Uncommon Plant Communities

Provide for the non-degradation of the natural qualities of any plant community that is uncommon to the Tahoe Basin or of exceptional scientific, ecological, or scenic value. This threshold will apply but not be limited to the deep-water plants of Lake Tahoe, Grass Lake (*sphagnum fen*), Osgood Swamp, the Freel Peak Cushion Plant Community, Hell Hole (*sphagnum fen*), Upper Truckee Marsh, Taylor Creek Marsh, and Pope Marsh.

V-3—Sensitive Plants

Maintain the minimum number of population sites for five TRPA special-interest plant species: Galena Creek rockcress (*Arabis rigidissima* var. *demota*); long-petaled Lewisia (*Lewisia longipetala*); Cup Lake draba (*Draba asterophora* var. *macrocarpa*); Tahoe draba (*Draba asterophora* var. *asterophora*); and Tahoe yellow cress (*Rorippa subumbellata*).

V-4—Late Seral/Old-Growth Ecosystems

Attain and maintain a minimum percentage of 55 percent by area of forested lands within the Tahoe Basin in a late seral or old-growth condition, and distributed across elevation zones. Forested lands within TRPA-designated urban areas are excluded in the calculations for threshold attainment.

W-1—Wildlife Species of Special Interest

Preserve a minimum number of population sites for six TRPA special-interest wildlife species: northern goshawk (*Accipiter gentilis*); osprey (*Pandion haliaetus*); bald eagle (*Haliaeetus leucocephalus*); golden eagle (*Aquila chrysaetos*); peregrine falcon (*Falco peregrinus*); and waterfowl. Mule deer, another special-interest species, does not have a specified threshold site number. The perching and nesting sites of special-interest bird species will remain undisturbed. TRPA upholds a non-degradation standard within buffer zones (also known as "disturbance zones") surrounding the nesting sites of these species. In regions outside existing urban areas, any projects or land uses within the disturbance zones will not significantly affect the habitat or lead to the displacement or extirpation of the population, either directly or indirectly. Any manipulation of the habitat within disturbance zones is prohibited, except for habitat enhancement. The disturbance zone for the northern goshawk and bald eagle extends to a 0.5-mile radius around each nesting site, the disturbance zone for osprey, peregrine falcon, and golden eagle extends to a 0.25-mile radius around each nesting site. TRPA has also delineated disturbance zones for wintering bald eagles. For deer, the disturbance zones are meadows. The non-degradation standard in wildlife disturbance zones is not applicable in instances where these species choose areas close to existing developed parcels.

W-2—Habitats of Special Significance

Implement a non-degradation standard for habitats that include deciduous trees, wetlands, and meadows (i.e., riparian, wetland, and meadow habitats), while also creating opportunities to expand the area of such riparian associations. This involves, but is not limited to, maintaining existing naturally functioning SEZ lands in their original hydrologic state, restoring all disturbed SEZ lands in undeveloped, non-subdivided areas, and rehabilitating 25 percent of the SEZ lands that have been identified as disturbed, developed, or subdivided, with the aim of achieving a 5 percent overall increase in the naturally functioning SEZ land.

3.3.2.6 Local – California

Given the extent of the Working Area, this section describes local regulations in a broad and general manner. For local governments (e.g., counties, cities) within California that do not operate under an approved NCCP program, guidance is provided through the local government's general plan. A required element of a local general plan includes the protection and preservation for the diverse array of wildlife species and their habitats occurring throughout California. Specifically, the general plan should account for current habitats, health of wildlife, projected changes in such habitat due to climate change, wildlife conservation, responsible development and the needs of a growing human population, habitat connectivity and potential threats to such habitat from development pressures,

fragmentation, and edge effects. Furthermore, as stated in the General Plan Guidelines document put forth by California Office of Planning and Research, due to the considerable overlap between habitat lands and agricultural lands, multiple benefits for wildlife and agriculture may be gained by coordinating conservation plans and strategies.

Given the nature and known boundaries of work proposed at the Lassen and Tuolumne facilities and the Port site, relevant county or city general plans and ordinances are described in the following section.

Lassen County

Lassen County General Plan

The Lassen County General Plan addresses biological resources under Chapter 3, Natural Resources Element and Chapter 5, Wildlife Element (Lassen County 2000). The General Plan establishes the following goals, policies, and implementation measures related to biological resources in the county limits that may apply to the proposed project:

Natural Resources Element

Goal N-1. Productive cooperation with and from Federal and state agencies which manage natural resources in Lassen County and improved consistency in resource management objectives, policies and programs.

Policy NR-1. Federal and state agencies shall be requested and expected to coordinate and cooperate with the County when considering resource management issues in Lassen County, and to recognize the County's General Plan and resource management policies pursuant to the National Environmental Policy Act and the Federal Land Policy and Management Act.

Policy NR-2. The County shall consider related polices [*sic*] of this element and the General Plan when reviewing and responding to interagency resource management issues.

Policy NR-3. The County supports partnerships of private resource users with public agencies to provide for continued progressive management and conservation of public and private resources within the context of productive stewardship.

Policy NR-4. Proposed changes in Federal resource management policies and related environmental evaluations need to consider and mitigate potential economic, social and cultural impacts to Lassen County citizens and communities, and impacts to related private lands in Lassen County.

- Implementation Measure NR-A - The County supports the use of memorandums of understanding with Federal and state agencies to clarify and establish interagency agreements for the review and development of policies, programs and actions which address resource management issues of mutual concern.
- Implementation Measure NR-B - The County supports the establishment of locally-based resource advisory councils, with County participation, to advise public agencies on a wide variety of land use and resource issues. Such councils should: provide adequate representation of local social and economic concerns; focus on the array of ecosystem and multiple-use issues associated with Federal and state lands; participate directly and effectively in the preparation and amendment of resource management plans; and have an effective role with respect to influencing and guiding implementation of resource management plans.

- Implementation Measure NR-C - The County supports the use of the NEPA process by Federal agencies and the CEQA process by state agencies, in consultation and cooperation with the County, to carefully evaluate and mitigate social and economic impacts to local communities which may result from significant changes in resource management policies and regulations, including those that apply to agriculture and livestock uses on public lands.

Policy NR-5. Proposed acquisitions of land for State wildlife areas will be reviewed on a case-by-case basis by a standing committee representing agriculture, sportsmen, recreation, the environment, and the general public. The County will consider the findings and recommendations of this committee and shall support acquisitions that are found to meet the following criteria:

- A management plan for the wildlife area has been developed with input from local groups and will be implemented.
- Funding will be available for maintenance of structures, fences, etc., as well as to carry out the management plan. A strong commitment to provide this funding into the future to carry out the management plan needs to be evident.
- The proposed acquisitions are focused towards conserving key habitats or resources.
- Payments in-lieu of taxes should be paid by the state or appropriate public agency to maintain the county tax base.
- There is both a willing buyer and a willing seller.

Policy NR-6. The County supports agricultural uses in state wildlife areas and private wildlife management areas (PLM's) which are compatible with and complimentary to the management objectives of the area.

Goal N-2. To protect and maximize the present and future productive, economic and environmental values of the County's soil resources.

Policy NR-12. The County encourages sound soil management and erosion prevention and control programs and projects, including the use of windbreaks, minimum tillage practices, grazing management, and riparian area rehabilitation.

Goal N-7. To maintain diverse and healthy vegetation communities in order to sustain natural and economic benefits, including watershed, soil stabilization, wildlife, fisheries, timberland, grazing and scenic values.

Policy NR-25. The County recognizes that there are vegetation communities that warrant special consideration and protection, and that these areas may be regarded as important or significant vegetation communities or areas of special biological importance. These areas include, but are not limited to, bitterbrush plant communities, wetlands and riparian areas.

- Implementation Measure NR-I - The County shall work with other resource agencies to identify and map important vegetation resource areas in order to implement resource-specific policies and actions to more efficiently manage those areas.

Policy NR-26. In order to avoid or reduce the extent of potential adverse impact to important vegetation communities which may result from projects and land use decisions within its jurisdiction, the County shall consider the potential extent of such impacts in the course of project review.

Policy NR-27. Projects subject to County approval which will result in significant disturbance of a site's vegetative cover shall be required to prepare and implement an effective plan to revegetate disturbed, undeveloped areas of the site.

- Implementation Measure NR-J - Pursuant to the California Environmental Quality Act, the County shall review the potential for impacts of proposed projects on vegetation resources and shall require appropriate mitigation measures to avoid, reduce, or compensate for the extent of significant adverse impacts. Such mitigation measures may include the clustering of housing and development to conserve natural vegetation and the implementation of revegetation plans. Plans and revegetation measures shall also include provisions to avoid the introduction of noxious weeds.

Goal N-8. Protection of rare and endangered plant species balanced with the need to sustain productive, multiple land uses when possible.

Policy NR-28. The County recognizes the need to identify and provide reasonable measures for the protection of rare and endangered plant species in the consideration of projects and land use decisions.

- Implementation Measure NR-K - Pursuant to the California Environmental Quality Act, the County shall consider the impacts of proposed projects on rare and endangered plant resources and shall require necessary mitigation measures to avoid, reduce, or compensate for the extent of significant disturbance.

Goal N-9. Control invasive weeds and plant species.

Policy NR-29. The County supports strong measures to eliminate or prevent the spread of invasive and noxious weeds and plant species including, but not limited to, medusahead, yellow starthistle, and perennial pepperweed (whitetop), and to control the adverse effects from the excessive spreading of such species as juniper and cheatgrass.

- Implementation Measure NR-L - The County will review the need for the formation of weed abatement districts or similar measures to help control the spread of invasive weeds.

Goal N-10. Manage wildfire for the protection of life, property and natural resources.

Policy NR-30. The County supports programs for vegetation management to reduce the probability and potential severity of wildfires, provided that due consideration is given to related site-specific resource issues including protection of wildlife habitat and visual impacts in highway corridors.

Goal N-11. Healthy forest environments which will continue to provide resources for multiple uses and timber production in sustainable quantities which will benefit the local economy.

Policy NR-33. The County supports the balancing of policies for the conservation of natural resources (including wildlife management policies) in forested areas with the need to maintain production of timber at abundant, sustainable levels as an economic resource.

Policy NR-35. The County supports the efforts of the timber industry and local citizens to forge cooperative plans and agreements to achieve diverse objectives for protecting and managing forest resources while providing for the long-term economic stability of timber-reliant industries.

Policy NR-36. In areas having significant forest and timber resources, the County supports the formulation of resource management goals and objectives which address the long-term health and diversity of resources in these areas as well as the sustained productivity of timber products.

Policy NR-37. The County supports management of endangered species and critical wildlife habitats in balance with other resource management needs, including the need for economic stability related to timber industries.

Wildlife Element

Goal W-1. To protect and enhance the overall health of wildlife habitats and special resource areas to maintain healthy, abundant and diverse wildlife populations.

Policy WE-1. The County supports the management of wildlife resources in ways that enhance the health and abundance of wildlife populations and the diversity of species and their habitats and which, at the same time, balance management policies and program objectives with the range of social and economic needs for which the County is also responsible.

Policy WE-2. The County supports the cooperative identification of “areas of significant wildlife value" or similar designations for areas where it is demonstrated by sound biological science that the habitat values are of significant importance to the health and/or survival of one or more species of wildlife. The County may apply a special designation to these areas, and/or agree to support specific resource management objectives, policies and voluntary programs to protect wildlife resources within these areas.

- Implementation Measure WE-A - The County will work with local stakeholders including property owners, agricultural organizations, sportsmen groups, applicable state and Federal resource management agencies, and the general public to develop and implement a cooperative "Lassen County Wildlife Resources Management Program". This program, which will be modeled after the Coordinated Resources Management Plan (CRMP) process, will define and identify important wildlife habitats and related issues and propose specific management objectives including objectives which address the current and future condition of resources in these areas. The program will propose policies and actions by which the County, stakeholders and involved agencies can work together to manage related wildlife resources in balance with other land use and resource management objectives.
- Implementation Measure WE-B - The County encourages and supports the development and implementation of a voluntary and cooperative land and resource management program by land owners and representative organizations (e.g., the Lassen County Farm Bureau, the Cattlemen's Association, Resource Conservation Districts, etc.) which proposes goals,

objectives and actions to protect wildlife resources on private lands in Lassen County. Such a program could become a major component of the proposed Lassen County Wildlife Management Program.

- Implementation Measure WE-C - Information from the California Department of Fish and Game will be used by the County to evaluate potential impacts to fish and wildlife as a result of proposed County policies and land use decisions. The County shall consider recommendations from the Department of Fish and Game and other agencies, special commissions and interested organizations regarding the identification of important wildlife habitat areas and the need for measures by the County, including special general plan amendments and zoning, to provide adequate protection of wildlife resources. Information and related recommendations should be provided in a manner which can be used to formulate protective measures which can be implemented on a programmatic (as opposed to a case-by-case) basis.
- Implementation Measure WE-D - The County will encourage cooperation with state and federal agencies to make wildlife habitat and resource maps used for land use and resource planning available to the public. Appropriate local agencies and organizations will be given opportunities to review these maps and comment on their accuracy and validity.
- Implementation Measure WE-E - In review of project proposals, the County will continue to utilize the California Environmental Quality Act process to evaluate the potential for significant adverse impacts upon wildlife resources and will require appropriate related project decisions and necessary mitigation measures.

Policy WE-3. To support and protect the value and viability of areas having significant wildlife habitat resources, including migration corridors, such areas should remain in relatively large parcel units. County zoning and subdivision regulations should protect these resources by not allowing isolated subdivisions intended primarily for residential use (except in limited circumstances pursuant to the County's zoning ordinance, e.g., segregation of homesites, in association with approved use permits, etc.) to be developed in areas which are not specifically designated in the General Plan or an area plan for a community development land use (e.g., rural residential) and zoned accordingly.

Policy WE-5. Prior to the imposition of substantial wildlife-related mitigation measures by the County, the County shall review evidence demonstrating that the proposed action or project could otherwise have potentially significant adverse impacts to wildlife and that the proposed measures will, in fact, help accomplish practical and necessary mitigation objectives.

- Implementation Measure WE-F - The County shall, in consultation with land owners, sports groups, and other concerned groups, agencies and organizations, consider the use of specific resource protection and management tools for wildlife habitat when warranted, including but not limited to the use of: clustered development and conservation subdivisions; conservation easements; building restrictions such. as special setbacks; natural vegetation retention requirements; mechanisms to facilitate transfers of development rights; developer credits and density bonuses; 'wildlife mitigation funds' with funds to be used for acquisition and/or improvement of wildlife habitat; land dedication to public agencies or land trusts; and habitat banking. When used as mitigation measures, such actions shall be proportional to the magnitude of impacts caused by the project in question.

- Implementation Measure WE-G - When the resource value of wildlife habitat on lands proposed for development necessitates additional protection measures, the County may utilize a "Natural Habitat Combining District" to include specific provisions for special building site area requirements, building exclusions areas, retention of habitat in designated areas, requirements for special review and approval of site development plans prior to issuance of development and building permits, and other provisions which, in the County's judgement, are necessary to allow development while providing appropriate levels of protection for the identified habitat.

Policy WE-6. Funding for wildlife habitat programs (e.g., wildlife mitigation funds), should be directed to protect and enhance wildlife resources in the county, especially when funds are generated in Lassen County.

Policy WE-9. The County supports cooperation between the California Department of Fish and Game and the Nevada Department of Wildlife in the management of interstate deer herds.

Goal W-2. Protection of rare, threatened, and endangered wildlife species with an ecosystem approach to habitat management which also supports multiple land uses.

Policy WE-10. Through local coordination, the County encourages programs and actions to remove and avoid the listing of additional wildlife species as threatened or endangered by the state or Federal government. When listings are proposed, sound biology needs to be applied to the preparation of habitat management plans and/or recovery plans, and the related social and economic impacts of such plans and related measures need to be considered and mitigated.

Goal W-4. Protect and enhance the wildlife habitat of riparian areas and wetlands.

Policy WE-16. The County supports interagency efforts to protect and restore the wildlife habitat values of lakes, riverine and riparian areas and wetlands.

- Implementation Measure WE-H - In consideration of proposed projects which may affect lakes, streams, riparian areas or wetlands, the County will review the potential for proposed impacts through the CEQA process and require appropriate mitigation measures to avoid and mitigate significant adverse impacts.

Goal W-5. Protect and enhance important upland habitat areas which include bitterbrush, mountain mahogany and aspen.

Policy WE-17. The County supports cooperative efforts to protect and enhance the wildlife habitat values of upland vegetation communities of bitterbrush, mountain mahogany and aspen.

- Implementation Measure WE-I - In consideration of proposed development projects which may affect vegetation communities of bitterbrush, mountain mahogany and aspen which provide important upland habitat, the County will review the proposals for potential impacts through the CEQA process and require appropriate mitigation measures to avoid and mitigate significant adverse impacts.

Goal W-6. Maintain, restore and enhance fishery resources and habitat within the county.

Policy WE-18. The County supports the protection and improvement of the County's fishery resources, including fish stocking of local waters, in concert with related land use and resource management objectives.

Lassen County Code

The Lassen County Ordinance Code addresses biological resources under Chapter 18, Zoning (Lassen County 2023). The Ordinance Code establishes the following zoning districts related to natural and biological resources that may apply to the proposed project:

Section 18.52 F-R Forest Recreation District

18.52.010 Intent-The F-R district is intended to be an area of low density, transitory use. It is designed to provide forest recreation and outdoor experiences for county residents and tourists at the same time providing protection of natural resources under private ownership, e.g., wildlife habitat, watershed maintenance, viewshed, minimize fire hazards, and scenic resources. These are areas where public services are not available and are not to be provided on a year-round basis. (Ord. 467 § 25, 1984).

Section 18.69 U-C-2 Upland Conservation/Resource Management District

18.69.010 Intent

- Management of the county's valuable natural resources, including agricultural land, timberland, grazing land, wildlife habitat, minerals and scenic resources, is essential to ensure that such resources will be available to accommodate appropriate growth and development of the community and its economy. With effective management, the county and its residents can retain the ability to benefit in the future from those important resources.
- This district classification is intended to be applied as implementation of the county's general plan in the mountain, upland foothill, and valley areas of the county in which forestry, mining, grazing and recreation (e.g., hunting, hiking, camping, fishing, off-road vehicle use and nature study) are natural and desirable uses; and in floodplains and important water basin in which protection of water shed lands from wildfire, erosion, pollution and other detrimental effects is essential to the general welfare of residents of the county. It is further intended that this district will be applied to land areas which are classified by the general plan as natural resource land uses and identified as intensive agriculture, extensive agriculture, open space, scenic corridor, conservation/conservation corridor, and trail corridor, or other natural resource land use designations adopted in addition to, or to replace the foregoing. (Ord. 467-AC § 23, 2003; Ord. 467-D, 1987)

Section 18.94 NH Natural Habitat Combining District

18.94.010 Intent- The intent of the NH natural habitat combining district is to protect areas which are recognized and established in the county general plan and applicable area plans as important to the wildlife populations of the county. These resources are important to the scenic, recreation, cultural, social, and economic values of the county. Accordingly, the county, in desiring to provide an appropriate place for these wildlife populations and to minimize the effects of development on them, while at the same time maximizing the enjoyment and use of private property, establishes the regulations provided in this chapter. (Ord. 467 § 63, 1984).

Tuolumne County

Tuolumne County General Plan

The Tuolumne County General Plan addresses biological resources under Chapter 16, Natural Resources Element (Tuolumne County 2018). The General Plan establishes the following goals and policies related to biological resources in the county limits that may apply to the proposed project:

Natural Resources Element

Goal 16B. Support the diversity and quality of biological resources while balancing the needs of public use and private property rights.

Policy 16.B.1. Recognize and map the variety of open space types and areas that are located within the county, including natural resources, recreation areas, geologic hazards, floodplains, groundwater recharge areas, managed resource areas and other open areas that support biological resources.

Policy 16.B.2. Recognize that agricultural and timberlands may be compatible with conservation of biological resources.

- Implementation Program-16.B.a- Recognize that the open area provided by land designated as Agricultural or Timber Production on the General Plan land use diagrams that supports an agricultural, timber management or residential land use or is unimproved may be used to provide on-site or off-site mitigation for development projects, such as conservation easements, mitigation banks for plant and wildlife species impacts, and other in perpetuity mitigation options.

Policy 16.B.4. Recognize that wildlife, fish and their habitats provide opportunities for recreational uses and educational pursuits and are a source of revenue to the County.

- Implementation Program-16.B.b - Encourage the preservation of open areas for recreational activities, including provision of an appropriate balance of facilities suitable for intensive use (e.g. playgrounds, sports fields) and low intensity use (e.g., hiking, camping) that meet the needs of residents and visitors. Preservation of open areas that provide cultural, historical and educational opportunities for residents and visitors should also be encouraged.
- Implementation Program-16.B.c - Allow trails, other recreational uses and educational pursuits in areas conserved for biological resources if the effects of such uses are determined to be compatible with conservation of the resources.
- Implementation Program-16.B.d - Design parks and trails incorporating scenic resources and biological and water resource areas consistent with the goals and policies of this Element of the General Plan.
- Implementation Program-16.B.e- Review all revisions of the Recreation Master Plan prior to adoption for consistency with this Element of the General Plan. In addition, design plans for all trails, especially those adjacent to creeks, shall require the input and review of the Tuolumne County Community Resources Agency and the California Department of Fish and Wildlife for consistency with this Element.

Policy 16.B.5. Evaluate and mitigate impacts to biological resources in accordance with the requirements of State and Federal law.

- Implementation Program-16.B.g- Maintain the Tuolumne County Wildlife Maps to assist in evaluating the effects of land development projects.
- Implementation Program-16.B.h - Provide the following information to assist in the evaluation of biological resources:
  - Tuolumne County Wildlife Maps
  - Deer Herd Maps and Management Plans
  - California Wildlife Habitat Relationships habitat typing and mapping
  - U.S. Department of Agriculture Forest Service Calveg mapping data
- Implementation Program-16.B.i - Require development that is subject to a discretionary entitlement from the County and to environmental review under the California Environmental Quality Act (CEQA) to evaluate potential impacts to biological resources and mitigate significant impacts for the following or as otherwise required by State or Federal law:
  - species listed or proposed for listing as threatened, rare, or endangered under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA);
  - species considered as candidates for listing under the ESA or CESA;
  - wildlife species designated by CDFW as Species of Special Concern;
  - animals fully protected under the California Fish and Game Code; and
  - plants considered by CDFW to be "rare, threatened, or endangered in California" (California Rare Plant Ranks [CRPR] of 1A, presumed extinct in California and not known to occur elsewhere; 1B, considered rare or endangered in California and elsewhere; 2A, presumed extinct in California, but more common elsewhere and 2B, considered rare or endangered in California but more common elsewhere).
  - Sensitive natural communities, including wetlands under Federal or State jurisdiction, other aquatic resources, riparian habitats, and valley oak (Quercus lobata) woodland.
  - Important wildlife movement corridors and breeding sites.
  - Oak woodlands, as provided in Implementation Program 16.B.j.
- Implementation Program-16.B.j- Establish thresholds of significance under the California Environmental Quality Act (CEQA) for the conversion of oak woodlands in Tuolumne County. The following provides the County's recommended standard guidelines for determining whether a project may result in a significant impact to oak woodlands, for purposes of review under the California Environmental Quality Act and Public Resources Code Section 21083.4
  - An oak woodland is defined in the General Plan as a woodland stand with 10% or greater native oak canopy cover. Tree removal from parcels with less than 10% native oak canopy cover is not considered a significant conversion or loss of oak woodland.
  - For parcels with 10% or greater native oak canopy cover (i.e., parcels with oak woodland, as defined in the General Plan), a significant impact to oak woodland includes tree removal that reduces the total oak canopy cover on site to below 10% (i.e., conversion to non-oak woodland), or a loss of 10% or greater of oak canopy woodland stand on the parcel, if the

conversion or loss is determined by a trained professional to be substantial in consideration of, but not limited to, the following:

- Total acres and amount of woodland stand removed or disturbed, and amount retained on site.
- Pattern of development or habitat loss on site (e.g., clustered vs. dispersed).
- Existing habitat functions and quality (e.g., intact/high-quality, moderately degraded, or severely degraded).
- Stand age- or size-class structure.
- Rarity.
- Landscape position in relation to larger wildlife corridors, stream systems, or other important natural features.
- Loss of valley oak (Quercus lobata) woodland, which is a sensitive habitat.
- Proximity to other oak woodland patches and connectivity to large blocks of intact habitat.
- Contribution to a cumulative loss, degradation, or fragmentation of oak woodland across the County

- Removal of valley oaks (Quercus lobata), regardless of woodland stand size or canopy cover, shall require evaluation and determination as set forth above, including consideration of any unique habitat value provided by valley oaks.

- Implementation Program-16.B.j.1- When considering discretionary development proposals, the County, through CEQA reviews, will require that project applicants map oak woodland resources on the project site and, where feasible, establish buffers around existing oak woodland stands to prevent adverse effects. For mapping purposes, project applicants may use the County's existing oak woodland map (developed for the Recirculated Draft EIR) as an initial base map for project-specific ground-truthing/field verification. The County will require implementation of BMPs while working near retained oak woodlands to avoid inadvertent damage to oak trees. BMPs will include establishment of no-disturbance buffers around the outer canopy edge to prevent root and crown damage, soil compaction, and standard management practices to reduce introduction and spread of invasive species and other indirect effects. For those impacts on oak woodland that cannot be avoided, the County will require the project applicant to minimize adverse effects. If substantial conversion of oak woodland will occur based Section D – The Tuolumne County Natural Environment Chapter 16 –Natural Resources Element 16-7 on Implementation Program 16.B.j, the County will require one or more of the following mitigation measures be implemented to mitigate the impact from loss of oak woodland habitat pursuant to Public Resources Code Section 21083.4, (which specifies certain projects, including commercial agricultural production, are exempt from the requirements of Section 21083.4):

  - Conserve oak woodlands through the purchase of conservation easements.
  - Plant acorns and container stock from a local seed source to replace oak woodland removed. The following parameters will be applied:
  - Plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees.
  - Maintain trees for seven years after the trees are planted.

  - Planting may not account for more than 50 percent of the required mitigation and must occur on lands that are subject to conservation easements, zoned open space, or similarly restricted from development.
  - Mitigation through planting may be used to restore former or degraded oak woodlands.
  - Contribute funds to the Oak Woodlands Conservation Fund, as established under subdivision (a) of Section 1363 of the Fish and Game Code, for the purpose of purchasing oak woodland conservation easements, the Tuolumne County Oak Woodland Conservation Fund, or other appropriate established oak woodland conservation fund.

- Implementation Program-16.B.j.2- The County will require project applicants to develop a mitigation and monitoring plan to compensate for the loss of oak woodland habitat. The mitigation and monitoring plan will describe in detail how loss of oak woodlands shall be avoided or offset, including details on restoration and creation of habitat, compensation for the temporal loss of habitat, success criteria ensuring habitat function goals and objectives are met, performance standards to ensure success, remedial actions if performance standards are not met, and requirements for reporting implementation actions and progress to the County. The plan will include detailed information on the habitats present within the preservation and mitigation areas, the long-term management and monitoring of these habitats, legal protection for the preservation and mitigation areas (e.g., conservation easement, declaration of restrictions), and funding mechanism information (e.g., endowment). If planting is used as part of compensatory mitigation, an oak planting plan will be developed by a qualified professional such as a professional biologist, arborist, or registered professional forester
- Implementation Program-16.B.j.3- Oak woodlands habitat placed under conservation easements will be at appropriate ratios to offset the loss of habitat functions and values of the oak woodland to be lost. Oak woodland habitat preserved this way should have similar tree sizes and densities, species composition, site condition, and landscape context to the oak woodland to be removed to serve the same function and have similar habitat value. At a minimum, 1 acre of oak woodland habitat providing similar functions and values will be placed under conservation easement for every acre of oak woodlands habitat lost

Policy 16.B.6. Allow property owners to utilize the Tuolumne County Wildlife Handbook, which may be updated periodically, to assist in designing mitigation for impacts to biological resources resulting from new development.

- Implementation Program-16.B.k.- Periodically update the Tuolumne County Wildlife Handbook in accordance with changes in State and Federal laws and environmental review standards, recognizing that state and federal laws may require mitigation beyond what is adopted in the Wildlife Handbook.

Policy 16.B.8. Balance the conservation of biological resources with the need to reduce wildland fire hazards.

- Implementation Program-16.B.p.- Encourage vegetation removal for fire protection purposes or as otherwise required by the Tuolumne County Fire Department in the Open Space zoning district or other areas conserved through zoning, provided such vegetation removal is addressed in a management plan and approved following review under the California Environmental Quality Act.

Policy 16.B.9. Encourage the eradication of invasive plant species to protect native habitats, conserve agricultural land, support ecological diversity and reduce the wildland fire hazard.

- Implementation Program-16.B.q.- Discourage the sale of invasive plant species and noxious weeds identified by the State.
- Implementation Program-16.B.r. - Support efforts to control, and where possible, eradicate, invasive plant species in the County.
- Implementation Program-16.B.s. - Seek grant and other funding sources for programs to eradicate invasive plant species from the County.
- Implementation Program-16.B.t. - Refer applications for discretionary land development entitlements to the Agricultural Commissioner to identify potential impacts from invasive plant species and recommend appropriate mitigation measures.
- Implementation Program-16.B.u. - Encourage eradication of invasive plant species in biological resource conservation areas provided such eradication is addressed in a management plan prepared by a biologist on the County's list of approved environmental consultants and approved by the County following review under the California Environmental Quality Act.
- Implementation Program-16.B.v. - Develop a programmatic approach to vegetation removal for the eradication of invasive plant species.
- Implementation Program-16.B.w. - Develop an incentive program to encourage the eradication of invasive plant species and the removal of vegetation for fire protection.

Policy 16.B.10. Encourage planting of native species or other drought tolerant species.

- Implementation Program-16.B.x. - Encourage the use of native species and other drought tolerant species listed on the Tuolumne County Landscape Guidelines to promote water efficiency and reduce impacts associated with the introduction of exotic species.

Policy 16.C.5. Encourage the conservation of oak woodlands and the preservation of heritage trees.

- Implementation Program-16.C.g. - Plant native trees throughout Tuolumne County.
- Implementation Program-16.C.h. - Make the Tuolumne County Oak Woodland Voluntary Management Guidelines available to property owners upon request to assist them with voluntary conservation of oak woodlands.
- Implementation Program-16.C.i. - Cooperate with agencies and entities in their efforts to encourage voluntary stewardship of tree resources including:
  - Providing brochures, produced by these and other interested agencies, illustrating protection methods for construction near native trees.
  - Distributing handouts promoting the retention of tree quality and quantity throughout the County by providing guidelines for replacing native trees removed during construction, including size and quantity.
  - Promoting elementary and secondary school programs providing education on the benefits of native trees and including acorn and tree planting programs.

Tuolumne County Code

The Tuolumne County Ordinance Code addresses biological resources under Section 8.14 – Hazardous Vegetation Management, Section 9.12 – Premature Removal of Native Oak Trees, and Section 17 – Zoning (Tuolumne County 2023). The Ordinance Code contains the following provisions related to biological resources that may apply to the proposed project:

Section 8.14.060. Duty to Remove and Abate Hazardous Vegetation

D. Fuel reduction shall not require the removal of healthy, mature, scenic trees; crops, productive vineyards or orchards; or marketable timber; however, it may impose mowing or livestock presence on grasslands, or fire-safe management of crops and forests.

E. Fuel reduction shall not be required within the bed, bank, or channel of any ephemeral or perennial streams which are mapped on USGS 7.5 minute quadrangle maps; in areas with environmental resources of hazardous or critical concern, including riparian areas and wetlands; or in areas which may cause a substantial adverse change in the significance of a cultural or historical resource.

Section 9.24.030 Premature removal.

The removal of native oak trees meeting one or more of the criteria listed below from a project site within the five (5) years preceding the submittal of an application for a discretionary entitlement from the County of Tuolumne for a land development project on that site is deemed premature removal of oak trees:

- Removal of native oak trees resulting in a 10% or more (>10%) average decrease in native oak canopy cover within an oak woodland;
- Removal of any old growth oak trees;
- Removal of any Valley Oak measuring 5” or greater in diameter at breast height (dbh). (Ord. 2903 §1 (part), 2008)

Section 17.14.010 Open Space District, Or (O) District

Purpose- The intent of the (O) district is to protect the public in areas not suitable for development because of flooding or other natural hazards and to provide areas of open space for the protection of wildlife habitat and scenic quality where vegetation removal may be appropriate in certain instances or for the preservation of cultural resources. (Ord. 2582 § 10, 2004; Ord. 1786 § 2 (part), 1990).

Section 17.15.010 Open Space – 1 District, Or (O-1) District

Purpose- The intent of the (O-1) district is to preserve and protect areas of valuable wildlife habitat consistent with the wildlife policies of the general plan or areas with significant cultural resources. (Ord. 2582 § 11, 2004)

San Joaquin County

San Joaquin County Multi-Species Conservation and Open Space Plan

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), as documented by the San Joaquin Council of Governments in 2000, outlines a strategy to strike a balance between preserving open

spaces and utilizing them for non-open space purposes. It also aims to ensure the long-term management of plant, fish, and wildlife species, particularly those currently listed or potentially listed in the future under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA). This plan spans 50 years, remaining in effect until 2049.

Participation in the SJMSCP is voluntary for local jurisdictions and independent project proponents. It allows participants to engage in permitted activities that might result in "Incidental Take" of listed species covered by the SJMSCP. Being part of the SJMSCP may streamline the approval process for development projects, as participants can avoid the need to acquire permits or authorizations directly from regulatory agencies.

City of Stockton

City of Stockton General Plan

Adopted in December 2018, the City's 2040 General Plan provides a comprehensive plan for the growth and development of the City. The plan comprises four separate Elements: Land Use, Transportation, Safety, and Community Health. There are no goals or policies for biological resources in this plan.

City of Stockton Municipal Code

The Stockton Municipal Code contains all ordinances for the City, identifies land use categories, provides site development regulations, and other general provisions to ensure consistency between the General Plan and proposed development projects. One code governing biological resources may apply to the proposed project:

> The intent of Sections 5-037 through 5-042 of the Stockton Municipal Code is to protect and preserve heritage trees on public or private land within the city limits. Heritage trees are defined as any valley oak (*Quercus lobata*), coast live oak (*Quercus agrifolia*), and interior live oak (*Quercus wislizenii*) tree with a trunk diameter of sixteen inches or more, measured at twenty-four inches above actual grade. Approval from the Community Development Department is required to remove a heritage oak tree.

Port of Stockton

Ballast Water Management Program

The Port of Stockton enforces a ballast water management program. As part of this program, information is disseminated to all vessels that visit the Port of Stockton in the form of a Ballast Water Advisory. The Ballast Water Advisory highlights California's legal requirements for ballast water exchange and is continuously updated to incorporate the improvements introduced by California's Marine Invasive Species Act (discussed above). Additionally, the Port maintains a record of data related to the quantity and composition of ballast water (saltwater, freshwater, or estuarine) discharged at the Port, its source, the date of discharge into the Port's waters, and its specific gravity.

3.3.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to biological resources are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to biological resources would occur if the project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Substantially reduce the number or restrict the range of a rare or endangered plant or animal.
- Substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The significance of impacts to biological resources was assessed by assessing the potential changes resulting from the proposed project to these significance thresholds. An evaluation of whether or not an effect on biological resources would be “substantial” with respect to the significance thresholds generally considers the following:

- amount and/or extent of the resource (numbers, acres, etc.) to be affected versus preserved;
- the relative biological value (rarity, functions and values) and/or sensitivity status of the resource and its relevance within a specified geographical area;
- the type and severity of impact, (i.e., would the project adversely affect wildlife through mortality, injury, displacement, or habitat loss or adversely impact vegetation through destruction of a sensitive plant population?);
- timing of the impact, (i.e., would the impact occur at a critical time in the life cycle of a special-status plant or animal, such as breeding, nesting, or flowering periods?);
- duration of the impact, (i.e., whether the impact is temporary or permanent).

The analysis of direct and indirect impacts covers construction, operation, and maintenance of the proposed project, including wood processing facility construction and operation, port facility construction and operation, and feedstock acquisition. Facility construction and operation is analyzed at the project level, and feedstock acquisition in the Working Area is analyzed at the program level (see below and refer to Chapter 1, Introduction, for more details). Direct impacts include those that occur immediately as a result of the proposed project on a particular

biological resource. Indirect impacts include those that are caused by the proposed project later in time, but that are still reasonably certain to occur.

3.3.4 Impacts Analysis

This section identifies impacts to biological resources from the proposed project's three primary phases (feedstock acquisition, wood pellet production, and transport to market) based on the above significance thresholds. It includes a description of the methods used to identify impacts followed by impact discussions for each potentially affected resource or resource group.

3.3.4.1 Methodology

Impact Types and Mechanisms

To aid in the determination of biological resource impacts, biologists identified activities and impact mechanisms (the physical activities associated with each project phase that could result in adverse effects on biological resources) under each of the proposed project's phases (feedstock acquisition, wood pellet production, transport to market) that could result in direct and indirect impacts and assessed their potential to trigger one or more impact significance criteria. Project phase activities evaluated are described in Section 2.4 and include the following:

1. Feedstock acquisition (GSNR Biomass Only Thinning Projects)
    a. Mechanical treatment: Cutting, uprooting, crushing/compacting, or chopping of existing vegetation during GSNR Biomass Only Thinning Projects undertaken by GSNR, or on GSNR's behalf.
    b. Manual treatment: The use of hand tools (e.g., loppers) and hand-operated power tools (e.g., chainsaws) to prune, thin, or remove vegetation during GSNR Biomass Only Thinning Projects undertaken by GSNR, or on GSNR's behalf.
    c. Stream crossings: Installation and use of stream crossings only where necessary to facilitate access to remote GSNR Biomass Only Thinning Project sites. Crossing type would vary depending on the resource traversed or spanned. These crossing would be temporary and removed following treatment.
    d. New low standard road construction: Installation and use of up to 1 mile of new low standard (unpaved) road as necessary to facilitate access to remote GSNR Biomass Only Thinning Project sites. New roadways would be no more than 14 feet wide. These roads would be abandoned following treatment.
2. Feedstock acquisition (Residuals from Third-Party Projects)
    a. Harvest residuals: Removal of residual biomass material resulting from timber harvest and forest management operations undertaken by third-parties unaffiliated with GSNR, including slash piles.
    b. Mill residuals: Collection of by-products of commercial lumbermills operated by third-parties unaffiliated with GSNR, including mill residual chips, sawdust, planer shavings, and bark.
3. Wood pellet production (Lassen and Tuolumne Facilities)
    a. Construction of wood pellet processing facilities and associated infrastructure.
    b. Operation of wood pellet processing facilities and associated infrastructure.
4. Transport to market (Port of Stockton)
    a. Rail delivery of finished pellets to Port of Stockton (West Complex).
    b. Construction of new wood pellet storage and loadout facility.

c. Operation of wood pellet storage and loadout facility.
d. Cargo ship delivery of finished pellets to overseas markets.

The following categories of impact mechanisms associated with one or more of the project phases listed above include the following:

- Ground disturbance: Grading, clearing, and excavation needed to construct new facilities and infrastructure.
- Vegetation removal: Removal or trimming of trees and other vegetation.
- Structure modification/demolition: Modification or removal of existing structures.
- Hazardous material and pollutant release: Inadvertent release of hazardous materials (e.g., oils and fluids from construction equipment) into sensitive habitat or aquatic resources.
- Noise: Noise generated by heavy equipment and workers.
- Vibration: Vibration generated by heavy equipment.
- Visual disturbance: Visual perception of construction activities and human presence by wildlife.
- Vehicle strike: Movement of construction vehicles (e.g., trucks on temporary access roads).

Project phase activities and categories of impact mechanisms applicable to each phase are summarized in Table 3.3-13 and described further below.

Table 3.3-13. Project Phase Activities and Applicable Potential Impact Mechanisms

Phase	Activity	Potential Impact Mechanisms							
		Ground-Disturbance	Vegetation Removal	Structure Mod/Demo	Hazardous Materials	Noise	Vibration	Visual Disturbance	Vehicle Strike
Feedstock Acquisition (Sustainable Forest Management Projects)									
GSNR Biomass Only Thinning Projects	Mechanical treatment	X	X		X	X	X	X	X
	Manual treatment	X	X		X	X	X	X	X
	Temporary stream crossing	X	X		X	X	X	X	X
	Access road construction	X	X		X	X	X	X	X
Residuals from Third-Party Projects	Harvest residuals	X	X		X	X	X	X	X
	Mill residuals								
Wood Pellet Production									
Lassen Facility	Facility construction	X	X	X	X	X	X	X	X
	Facility operation					X		X	X
Tuolumne Facility	Facility construction	X	X	X	X	X	X	X	X
	Facility operation					X		X	X
Transport to Market									
Port of Stockton	Facility construction	X	X	X	X	X	X	X	X
	Facility operation					X		X	X
	Cargo ship delivery					X		X	X

Notes: Mill residuals were determined to have no potentially significant impact on biological resources, for the reasons set forth later in this section. New access road construction and associated stream crossings would only occur where needed to facilitate access to remote treatment sites.

Project Level (Wood Pellet Production and Transport to Market)

Impacts associated with wood pellet production and transport to market are being evaluated at the project level. Project impacts may be direct (i.e., caused by the project and occurring at the same time and place) or indirect (i.e., reasonably foreseeable and caused by the project but at a different time, place, or both). Direct impacts to vegetation communities/land covers and jurisdictional aquatic resources associated with construction of new wood pellet processing (Lassen or Tuolumne) or storage (Port of Stockton) facilities were estimated by intersecting biological resource feature layers (vegetation/land cover, aquatic resources) with the anticipated limits of ground disturbance in a geographic information system (GIS). Prior to analysis, GIS analysts georeferenced portable document format (PDF) files and converted AutoCAD files provided by project engineers to ArcGIS geodatabases to facilitate intersects between design drawing and biological resource feature layers. Refer to Figure 2-5, Project Site Plan (Lassen), Figure 2-9, Project Site Plan (Tuolumne), and Figure 2-10, Project Location (Port Rough Terminal, Port of Stockton), for preliminary site plans at the Lassen Facility site, Tuolumne Facility site, and Port of Stockton site, respectively.

Program Level (Feedstock Acquisition Only)

Direct impacts to biological resources that could occur under the feedstock acquisition phase are described more generally at a program level, which is appropriate when activities can be characterized as part of one large project and are related either: (1) geographically; (2) a logical part in the chain of contemplated actions; (3) in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways. The overall program is used to analyze potential direct and indirect impacts, including the geographic area and the types of activities that may be undertaken due to the infeasibility of providing site-specific details at this stage of the project when individual feedstock acquisition sites have not yet been identified. Indirect impacts were assessed based on biologists' best understanding of proposed feedstock acquisition activities and the species likely to experience indirect impacts for each activity area. As such, this document functions as a Program EIR in accordance with State CEQA Guidelines Section 15168 for streamlining of CEQA review of later activities described in Section 2.4 of this EIR.

The proposed project includes project design features (PDFs) that would be implemented as applicable throughout the feedstock acquisition phase. The impact assessment and determinations for feedstock acquisition discussed in Section 3.3.4.2, Project Impacts, account for the influence of the below-listed PDFs, which are presented in Section 2.4.

- PDF-BIO-1 (Biological Resource Review and Reconnaissance-Level Surveys)
- PDF-BIO-2 (Worker Environmental Awareness Training)
- PDF-BIO-3 (Prevent Spread of Plant Pathogens)
- PDF-BIO-4 (Prevent Spread of Invasive Plants and Wildlife)
- PDF-BIO-5 (Special-Status Plant Focused/Protocol Surveys)
- PDF-BIO-6 (Avoid Mortality, Injury, or Disturbance of Special-Status Plants)
- PDF-BIO-7 (Special-Status Wildlife Focused/Protocol Surveys)
- PDF-BIO-8 (Nesting Bird Surveys and Avoidance)
- PDF-BIO-9 (Avoid Mortality, Injury, or Disturbance of Special-Status Wildlife)
- PDF-BIO-10 (Maintain Habitat Function for Special-Status Wildlife)

- PDF-BIO-11 (Avoid Special-Status Bumble Bees and Loss of Habitat Function)
- PDF-BIO-12 (Avoid Loss of Sensitive Natural Communities or Other Sensitive Habitats)
- PDF-BIO-13 (Avoid Loss of State and Federally Protected Wetlands)

Issues Not Evaluated Further in this Chapter

Transport of Feedstock Material to Pellet Facilities (Feedstock Acquisition)

Transporting feedstock material from the Working Area to the pellet facility sites would use existing haul routes, as shown on Figure 3.14-1, Feed Stock and Haul Routes - Lassen Facility, and discussed further in Section 3.14, Transportation. Local and state highways would constitute most expected haul routes throughout the Working Area and any wildlife (including special-status species) occurring in adjacent lands will have adapted to the noise associated with existing traffic along these highways. As noted in Section 3.14, use of a National Forest System Road for commercial hauling is prohibited without a Road Use Permit or written authorization. GSNR will operate under PDFs that require compliance with all applicable laws (see Section 2.4), and therefore adherence to U.S. Forest Service and state laws (e.g., Road Use Permits) would be required. No new road construction would be necessary for haul routes, and use of a given haul route would vary depending on the feedstock source and location. As such, these activities are not expected to result in direct or indirect impacts to biological resources and are not discussed further.

Mill Residual Removal (Feedstock Acquisition)

Collecting mill residuals in the Working Area would involve loading activities within an active mill subject to ongoing disturbance and maintenance. Any wildlife occurring on or adjacent to active mills will have adapted to existing disturbance levels (e.g., noise, vehicle traffic, human activity). As such, these activities are not expected to result in direct or indirect impacts to biological resources and are not discussed further.

Central Valley (GSNR Biomass Only Thinning Projects and Harvest Residual Removal)

Several special-status species known to inhabit the Central Valley were identified as having potential to occur within the Working Area, including valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), California tiger salamander, giant garter snake (*Thamnophis gigas*), and San Joaquin kit fox (*Vulpes macrotis mutica*). As previously discussed, feedstock acquisition in the Working Area would be restricted to National Forest land and other timber lands, which are depicted on Figure 2-2 as “Forest Management Area.” Within the Working Area, small and discontinuous patches of land in the Central Valley were mapped as part of the Forest Management Area. However, no feedstock acquisition activities, apart from hauling feedstock to the pellet facilities, would occur within the Central Valley. As such, there would be no impact as a result of GSNR biomass only thinning projects or harvest residual removal on these species and they are not considered further.

3.3.4.2 Project Impacts

Impact BIO-1a — The project may have a substantial adverse effect, either directly or through habitat modifications, on special-status plant species or substantially reduce the number or restrict the range of a rare or endangered plant.

Sustainable Forest Management Projects (Feedstock Acquisition)

A total of 643 special-status plant species have potential to occur in the Working Area. Those species associated with forest, woodland, and shrubland communities are most vulnerable to impacts from feedstock acquisition in the Working Area because of their predominance on National Forest land and other timberlands. As discussed in Section 2.4, feedstock for manufacturing of wood pellets would come from three sources in the Working Area: (1) GSNR biomass only thinning projects, (2) harvest residuals, and (3) mill residuals from third-party commercial lumbermills. However, and as discussed in Section 3.3.4.1, Methodology, there is only a potential for impacts to biological resources, including special-status plants, from two sources: GSNR biomass only thinning projects and harvest residuals, both of which are discussed below.

GSNR Biomass Only Thinning Projects

As discussed in Section 2.4, GSNR biomass only thinning projects (expected to range from 10 to 2,000 acres each) are wildfire fuel reduction operations designed to reduce the risk and severity of wildfire occurrence. The goal of fuel treatment is not to remove all vegetation, but to minimize the potential for ignitions, crown fires, and extreme fire behavior by reducing fuel loads and altering the structure, composition, and spacing (horizontal and vertical) of retained vegetation. GSNR biomass only thinning projects include hazardous fuel reduction projects, construction of shaded fuel breaks, site preparation, and fire, insect, and disease salvage harvests. These projects, depending on location, may also include up to 1 mile of new low standard (unpaved) road (per year, per project) and temporary stream crossings to access remote treatment sites.

Sustainable Forest Management projects (treatment activities) of this type in the Working Area would involve vegetation and debris removal that could directly impact special-status plants potentially occurring in work areas. Mechanical and manual treatment activities during GSNR biomass only thinning projects could result in the death, altered growth, or reduced seed set of special-status plants through physical breakage, trampling, or uprooting. Installation of new roads and temporary stream crossings (to facilitate access if necessary and practicable) at locations within or near special-status plant populations could also result in mortality of such species from ground-disturbing activities.

The above activities could also indirectly affect special-status plants. An indirect impact would occur if activities altered habitat or site conditions in a manner that later resulted in the death or lack of regeneration of special-status plants. Indirect impacts to special-status plants could result from: accidental spills of fuel or other hazardous materials, ground disturbance resulting in the introduction of invasive plant species, and dust generation. GSNR biomass only thinning projects would not involve the use of substantive quantities of hazardous materials or waste products and would be largely limited to fuels and oils that are associated with trucks, loading vehicles, and other motorized equipment. Use of this equipment and vehicles and any associated maintenance would be done in accordance with applicable federal, state, and local health and safety laws and regulations. However, unintentional release of fuels and oils into the root zone of special-status plant populations could result in mortality of the affected population. GSNR biomass only thinning projects could generate dust that could settle on the leaves of nearby special-status plants, adversely affecting photosynthesis, respiration, and transpiration. Additional ground disturbance resulting from these activities could create new barren substrates into which invasive plant species could expand and displace special-status plants. Together, these impacts could disrupt individual plants or small populations of plants in ways that reduce the growth, survival, and reproduction. In contrast, GSNR biomass only thinning projects could also cause indirect beneficial effects by restoring the normal fire return interval, removing invasive plant infestations and unnatural buildup of excess vegetation and vegetation debris, and thinning live trees and shrubs and removing dead or dying trees and shrubs. This would open the canopy where tree or shrub densities

are uncharacteristic of healthy or desired examples of the vegetation type and result in both immediate and long-term benefits to special-status plants.

Third-Party Harvest Residuals

As discussed in Section 2.4, GSNR would procure residual biomass material resulting from third-party sustainable forest management projects (i.e., harvest residuals) in the Working Area. Access to harvest residuals, including slash piles, and other downed vegetative debris (roundwood or chips), would primarily occur using existing logging/haul roads. This activity would be limited to discrete locations previously disturbed by treatment activities. Therefore, third-party harvest residuals would typically result in less ground disturbance than described above for GSNR biomass only thinning projects. Direct impacts to special-status plants from third-party harvest residuals could include death, altered growth, or reduced seed set of special-status plants through physical breakage, trampling, or uprooting. Indirect impacts could include accidental spills of fuel or other hazardous materials, ground disturbance resulting in the introduction of invasive plant species, and dust generation. These direct and indirect impacts would generally be similar, but typically lesser in extent and intensity than in the case of biomass only thinning projects. See above for additional information regarding these impacts.

Conclusion

GSNR biomass only thinning projects and third-party harvest residuals could have direct and indirect impacts on special-status plants. However, several project design features (PDFs) would avoid or minimize such impacts. As discussed in Section 3.9, Hydrology and Water Quality, hazardous materials used during feedstock activities would be transported, used, and disposed of in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. The proposed biomass only thinning projects would also implement a Stormwater Pollution Prevention Plan (SWPPP) (PDF-GEO-2) or equivalent document that would include steps to prevent, contain, and clean up hazardous material spills that could result from feedstock activities. PDF-GEO-1, PDF-GEO-2, PDF-GEO-5, and PDF-GEO-6 as applicable require implementation of measures to minimize soil erosion, which would reduce potential indirect impacts on special-status plants from soil destabilization and dusting. In addition, PDF-BIO-05 requires a protocol-level rare plant survey prior to biomass only thinning project activities and PDF-BIO-6 requires avoidance of special-status plant species if and where present in the work area. PDF-BIO-04 requires implementation of actions to prevent the spread of invasive plants and noxious weeds that could compete with special-status plants for water, light, and nutrients, which would reduce potential indirect impacts from competition with invasive species.

While PDFs would minimize impacts, the above feedstock activities in the Working Area could still result in direct or indirect impacts on special-status plants if these species and their habitat are not sufficiently avoided after identification and if these species occur in areas not avoided by treatment activities. This would be a **potentially significant** impact. However, with implementation of **MM-BIO-1** (Compensate for Unavoidable Loss of Special-Status Plants), the impact would be reduced to less than significant with mitigation.

Proposed feedstock activities in the Working Area would not include construction or operation of permanent structures or infrastructure. As a result, no long-term operation-related impacts would occur.

Wood Pellet Production

Lassen Facility

Special-status plant species evaluated for the Lassen Facility site have low potential or are not expected to occur due to the lack of suitable habitat or very low-quality wetland habitat within or adjacent to the site, the lack of documented occurrences near the site, and/or the site being outside of the species' known geographic or elevation range (see Appendix C2). As such, impacts to special-status plant species as a result of construction and operations at the Lassen facility site are not anticipated, and there would be **no impact**.

Tuolumne Facility

A total of seven special-status plant species have potential to occur on the Tuolumne facility site: Beaked clarkia, Tuolumne button-celery, spiny-sepaled button-celery, Stanislaus monkeyflower, forked hare-leaf, veiny monardella, and Patterson's navarretia. Three populations of Stanislaus monkeyflower (CRPR 1B.1 species) were mapped in spikerush marsh and cattail marsh the northern portion of the site. No other special-status plant species were identified during the focused plant survey conducted in May 2021. Because of the presence of suitable habitat and because the species described above are known to occur in the project region, there is potential for other individuals or populations of some of these species to become established in the project site area during future growing seasons. Many special-status plant species are annuals and thus may lie dormant in seedbanks or shift geographic locations based on annual weather conditions.

The proposed project would involve construction of a wood pellet processing facility and associated infrastructure that could directly impact special-status plants potentially occurring in the work area. Ground disturbance and vegetation removal to facilitate construction could result in the mortality, altered growth, or reduced seed set of special-status plants through physical breakage, trampling, or uprooting.

Construction of the wood pellet processing facility and associated infrastructure, as well as ongoing activities associated with operation of the facility, could also indirectly affect special-status plants. Ground-disturbing activities would generate dust that could settle on the leaves of nearby special-status plants, adversely affecting photosynthesis, respiration, and transpiration. Additional ground disturbance resulting from these activities would create new barren substrates into which invasive plant species could expand and displace special-status plants. Together, these impacts could disrupt ecosystem, community, or population structure or processes in ways that reduce the growth, survival, and reproduction of special-status plants.

As discussed in Section 3.6, the project would adhere to the required measures stipulated by a site-specific SWPPP to minimize soil erosion, which would reduce potential indirect impacts associated with construction and operations on special-status plants from soil destabilization and dusting. In addition, **MM-BIO-9** requires a protocol-level rare plant survey prior to construction and avoidance of special-status plant species if and where present in the work area wherever feasible. **MM-BIO-16** requires implementation of actions to prevent the spread of invasive plants and noxious weeds that could compete with special-status plants for water, light, and nutrients, which would reduce potential indirect impacts from competition with invasive species. While several mitigation measures would minimize impacts, construction at the Tuolumne facility site could still result in the direct removal of special-status plants or habitat modifications that lead to reduced survival, growth and reproduction if these species and their habitat are not sufficiently avoided after identification and if these species occur in areas not avoided by construction activities. This would be a **potentially significant** impact. However, with implementation of **MM-BIO-1**

(Compensate for Unavoidable Loss of Special-Status Plants), the impact would be reduced to less than significant with mitigation.

Operations and maintenance activities at the Tuolumne facility site would be limited to already disturbed or developed areas that do not provide habitat for special-status plants. As such, construction and operational impacts to special-status plant species at the Tuolumne facility site are not anticipated, and there would be **no impact**. No mitigation is required.

Transport to Market

Port of Stockton

Special-status plant species are not expected to occur at the Port site due to the lack of suitable habitat or the presence of very low quality habitat within or adjacent to the site, the lack of documented occurrences near the site, and/or the site being outside of the species' known geographic or elevation range. As such, construction and operational impacts to special-status plant species at the Port facility site are not anticipated, and there would be **no impact**. No mitigation is required.

Impact BIO-1b The project may have a substantial adverse effect, either directly or through habitat modifications, on special-status wildlife species or substantially reduce the number or restrict the range of a rare or endangered animal.

Sustainable Forest Management Projects (Feedstock Acquisition)

Introduction

Appendix C1, Table 3 identifies 200 special-status wildlife species known or with potential to occur in the Working Area. Those species associated with the forest and woodland and shrubland communities listed in Table 3.3-4 are most vulnerable to impacts from Sustainable Forest Management projects because of their predominance on National Forest lands and other timberlands. Refer to Table 3 in Appendix C1 for a summary of species identified as having a potential to occur in the region of the Working Area but are not expected to occur on forested lands where Sustainable Forest Management projects (feedstock acquisition) would be implemented.

For the purposes of this analysis, which covers a large geographic area, special-status wildlife species are organized into life history groups with similar exposures and responses to potential impacts from GSNR biomass only thinning projects and third-party harvest. Furthermore, the narrative below includes specific species examples to better illustrate potential impacts to each life history group. Table 3.3-14 presents the special-status species considered in this analysis categorized by the eight life history groups: tree-, cavity-, and shrub-nesting wildlife, ground- and cliff-nesting/breeding wildlife, burrowing or denning wildlife, terrestrial invertebrates, bats, ungulates, fish and aquatic invertebrates, and amphibians and reptiles.

Table 3.3-14. Special-Status Wildlife Species Considered and Grouped by Life History

Life History Group	Federal and/or State Listed and Fully Protected Species[1]	Non-Listed Special-Status Species[2]	
Amphibians and Reptiles	California tiger salamander	Blainville's horned lizard	Pacific tailed frog
	California red-legged frog	California glossy snake	southern long-toed salamander
	Cascades frog	Columbia spotted frog	Southern torrent salamander
	foothill yellow-legged frog - Feather River DPS	Del Norte salamander	western pond turtle
	foothill yellow-legged frog - north Sierra DPS	foothill yellow-legged frog - north coast DPS	
	foothill yellow-legged frog - south Sierra DPS	Kings River slender salamander	
	limestone salamander	Mount Lyell salamander	
	mountain yellow-legged frog	northern California legless lizard	
	Oregon spotted frog	northern leopard frog	
	Scott Bar salamander		
	Shasta salamander		
	Sierra Nevada yellow-legged frog		
	Siskiyou Mountain salamander		
	Yosemite toad		
Bats	None	fringed myotis	western mastiff bat
		long-eared myotis	western red bat
		pallid bat	western small-footed myotis
		spotted bat	Yuma myotis
		Townsend's big-eared bat	
Burrowing or Denning Wildlife	gray wolf	American badger	Sierra Nevada mountain beaver
	riparian brush rabbit	mountain lion	Sierra Nevada red fox - southern Cascades DPS
	San Joaquin kit fox	Mount Lyell shrew	Sierra Nevada snowshoe hare
	Sierra Nevada red fox - Sierra Nevada DPS	pygmy rabbit	western white-tailed jackrabbit

Table 3.3-14. Special-Status Wildlife Species Considered and Grouped by Life History

Life History Group	Federal and/or State Listed and Fully Protected Species[1]	Non-Listed Special-Status Species[2]		
Fish and Aquatic Invertebrates	bull trout	Archimedes springsnail	Klamath ramshorn	Owens sucker
	chinook salmon - Central Valley spring-run ESU	Benson Gulch hesperian	kneecap lanx	Pacific lamprey
	chinook salmon - Sacramento River winter-run ESU	bigeye marbled sculpin	Lahontan Lake tui chub	Pit-Klamath brook lamprey
	green sturgeon - southern DPS	blue chub	Lahontan mountain sucker	Pit sculpin
	Lahontan cutthroat trout	California floater	lined ramshorn	Railroad Valley springfish
	Lost River sucker	central California roach	Lower Klamath marbled sculpin	Red Hills roach
	Modoc sucker	Cow Head tui chub	McCloud River redband trout	Sacramento perch
	Owens tui chub	Eagle Lake rainbow trout	Miller Lake lamprey	Sacramento splittail
	Paiute cutthroat trout	Eagle Lake tui chub	Modoc pebblesnail	scalloped juga
	railroad Valley springfish	Goose Lake lamprey	montane peaclam	steelhead - Klamath Mountains Province DPS
	rough sculpin	Goose Lake redband trout	mountain whitefish	topaz juga
	Shasta crayfish	Goose Lake sucker	northern California brook lamprey	Turban pebblesnail
	shortnose sucker	Goose Lake tui chub	northern roach	Upper Klamath marbled sculpin
	steelhead - Central Valley DPS	Great Basin rams-horn	nugget pebblesnail	vernal pool fairy shrimp
	Warner sucker	Harney Basin duskysnail	Oregon Great Basin redband trout	vernal pool tadpole shrimp
		hardhead	Oregon lakes tui chub	Western ridged mussel
		highcap lanx		Willow Creek pyrg
		Kern brook lamprey		
		Klamath largescale sucker		
Ground- and Cliff-nesting/ breeding Wildlife	American peregrine falcon	American white pelican	mountain plover	
	California black rail	bufflehead	Mountain quail	
	greater sandhill crane	burrowing owl	northern harrier	
			Oregon snowshoe hare	

Table 3.3-14. Special-Status Wildlife Species Considered and Grouped by Life History

Life History Group	Federal and/or State Listed and Fully Protected Species[1]	Non-Listed Special-Status Species[2]		
		cackling (=Aleutian Canada) goose California gull California horned lark Columbian sharp-tailed grouse greater sage-grouse harlequin duck	prairie falcon red-necked grebe white-faced ibis yellow rail yellow-headed blackbird	
Terrestrial Invertebrates	Carson wandering skipper Crotch's bumble bee Franklin's bumble bee valley elderberry longhorn beetle western bumble bee	Crater Lake tightcoil hirsute Sierra sideband snail hooded lancetooth Johnson's hairstreak keeled sideband	Mardon skipper monarch - California overwintering population Mono checkerspot butterfly Morrisoni bumble bee Shasta chaparral snail Shasta hesperian Shasta sideband snail	Siskiyou hesperian Siskiyou short-horned grasshopper Suckley cuckoo bumble bee Tehama chaparral snail Tuolumne sideband snail Wintu sideband snail
Tree-, Cavity-, and Shrub-nesting Wildlife	bald eagle bank swallow California wolverine fisher - Southern Sierra Nevada ESU great gray owl Humboldt marten northern spotted owl Riparian (=San Joaquin Valley) woodrat	black swift California spotted owl Cooper's hawk double-crested cormorant ferruginous hawk fisher flammulated owl golden eagle	merlin northern goshawk osprey Pacific marten purple martin ringtail sharp-shinned hawk short-eared owl	

Table 3.3-14. Special-Status Wildlife Species Considered and Grouped by Life History

Life History Group	Federal and/or State Listed and Fully Protected Species[1]	Non-Listed Special-Status Species[2]	
	Swainson's hawk	grasshopper sparrow	Sierra marten
	tricolored blackbird	Lewis's woodpecker	song sparrow ("Modesto" population)
	western yellow-billed cuckoo	long-eared owl	three-toed woodpecker
	White-tailed kite		White-headed woodpecker
	willow flycatcher		yellow warbler
			yellow-breasted chat
Ungulates	Sierra Nevada bighorn sheep	None	

Notes:
[1,2] Refer to Section 3.3.1.1, Sustainable Forest Management Projects (Feedstock Acquisition in the Working Area), for definitions.

As discussed in Section 2.4, feedstock for manufacturing of wood pellets would come from three sources in the Working Area: (1) GSNR biomass only thinning projects, (2) harvest residuals, and (3) mill residuals from third-party commercial lumbermills. However, and as discussed in Section 3.3.4.1, there is only potential for impacts to biological resources, such as special-status wildlife, from two sources, GSNR biomass only thinning projects and third-party harvest residuals, both of which are briefly described below.

- **GSNR biomass only thinning projects:** These projects (expected to range from 10 to 2,000 acres each) are wildfire fuel reduction operations, undertaken by or on behalf of GSNR, that are designed to reduce the risk and severity of wildfire occurrence. The goal of fuel treatment is not to remove all vegetation, but to minimize the potential for ignitions, crown fires, and extreme fire behavior by reducing fuel loads and altering the structure, composition, and spacing (horizontal and vertical) of retained vegetation. These projects include hazardous fuel reduction projects, construction of shaded fuel breaks, site preparation, and fire, insect, and disease salvage harvests. These projects, depending on location, could include up to 1 mile of new low standard (unpaved) road (per year, per project) and temporary stream crossings. New roads and stream crossings would only be operational and maintained through the duration of treatment activities.
- **Third-party harvest residuals:** GSNR would procure residual biomass material resulting from third-party sustainable forest management projects (i.e., harvest residuals) in the Working Area. Access to harvest residuals, including slash piles, and other downed vegetative debris (roundwood or chips), would primarily occur using existing logging/haul roads. This activity would be limited to discrete locations previously disturbed by treatment activities. Third-party harvest residuals may be collected weeks to months following treatment activities at a given site.

Potential impacts to special-status wildlife from GSNR biomass only thinning projects and third-party harvest residuals are discussed for each of eight life history groups in the following text.

Amphibians and Reptiles

Special-status amphibians with potential to occur in the Working Area include, but are not limited to, foothill yellow-legged frog (*Rana boylii*), Yosemite toad (*Anaxyrus canorus*), Pacific tailed frog (*Ascaphus truei*), and southern long-toed salamander (*Ambystoma macrodactylum sigillatum*). Special-status reptiles with potential to occur in the Working Area include, but are not limited to, western pond turtle (*Emys marmorata*) Coronado skink (*Plestiodon skiltonianus interparietalis*), and Blainville's horned lizard (*Phrynosoma blainvillii*). Table 3.3-14 provides a comprehensive list of these species known to occur or with some potential to occur in the Working Area and considered in this analysis. Most of these species are closely tied to aquatic habitat but may estivate or lay eggs in underground burrows below leaf litter, rocks, and woody debris and seasonally disperse through upland habitat. Refer to Table 3 in Appendix C1 for additional species information.

GSNR Biomass Only Thinning Projects

Sustainable Forest Management projects (treatment activities) of this type would avoid most aquatic resources in the Working Area, including riparian areas and perennial streams, by at least 75 feet as set forth in Section 2.4. However, these projects may also include up to 1 mile of new low standard (unpaved) road (per year, per project) and temporary stream crossings. Installation of temporary stream crossings (to facilitate access if necessary and practicable) could result in mortality of special-status amphibians and reptiles from ground-disturbing activities if present in the work area. In addition, mechanical and manual treatment activities during GSNR biomass only thinning projects could impact special-status amphibians and reptiles if present in upland habitat or small aquatic

features in the treatment area. In general, there are two types of impacts discussed for special-status amphibians and reptiles: mortality to individual animals, and loss or modification of species habitat. These impact types are discussed below.

Mechanical and manual treatment activities, new road construction, and temporary stream crossings could result in direct mortality (i.e., physical harm) to special-status amphibians and reptiles from equipment and vehicle strikes, as well as direct removal of woody debris from slash piles occupied by wildlife. The risk of physical harm varies depending on the species, location, and seasonality. For example, amphibians that spend most of their time in close proximity to aquatic habitat and within riparian vegetation, such as foothill yellow-legged frog and Sierra yellow-legged frog (*Rana sierrae*), would be less at risk of direct harm as treatment activities would be restricted from these areas by at least 75 feet as set forth in Section 2.4. However, these species could be at risk if present in the work area during temporary stream crossing installation or if dispersing through uplands in the work area. Conversely, species that spend time below leaf litter, in burrows, or other refugia (e.g., rocks, logs, and bark), such as western pond turtle and southern long-toed salamander, could be accidentally crushed by heavy equipment or personnel.

Mechanical and manual treatment activities, new road construction, and temporary stream crossings could also indirectly harm special-status amphibians and reptiles in aquatic habitat from soil destabilization, dust accumulation, and transport to waterbodies. For example, toad or frog larvae occupying lacustrine environments may be sensitive to sedimentation as indicated by a reduction in growth and survival rates (Wood and Richardson 2009), unless there is an increase in organic matter from these inputs (Kupferberg et al. 1994). In addition, contaminants (e.g., fuels, lubricants, hydraulic fluids), if not properly contained, could be introduced into waterbodies and harm special-status amphibians and reptiles occupying these habitats.

GSNR biomass only thinning projects in the Working Area have the potential to impact special-status amphibians and reptiles through the temporary loss of, or modification to, upland and aquatic habitat within the work area. Heavy equipment and personnel could accidentally collapse burrows, and some treatments could remove refugia used by special-status amphibians and reptiles, such as slash piles and downed trees. Additionally, removing excess vegetation and vegetation debris from the forest floor and overstory thinning could modify understory conditions to favor species more adapted to drier environments (McIver et al. 2013).

In contrast, GSNR biomass only thinning projects could also cause indirect beneficial effects to special-status amphibians and reptiles by reducing the risk of severe wildfires (megafires) that cause catastrophic loss of habitat. There is abundant evidence that fuel reduction treatments effectively moderate the behavior of wildfires by lowering fireline intensity and by reducing severity and smoke production in treatment areas (Safford et al. 2012; Stephens et al. 2012; Prichard and Kennedy 2014; Lydersen et al. 2017; Hessburg et al. 2019; Prichard et al. 2020, 2021; Jones et al. 2022; North et al. 2021). Reducing the risk of megafires is important for wildlife as these events can homogenize landscapes, reduce overall species richness, and eliminate critical habitat for forest wildlife, including fire-dependent species (White et al. 2019; Kelly et al. 2020; Jones and Tingley 2022; Steel et al. 2022; Stillman et al. 2021).

Third-Party Harvest Residuals

While ground disturbance would be minor and localized, third-party harvest residual collection may occur weeks to months following treatment activities at a given site, allowing sufficient time for special-status amphibians and reptiles to inhabit slash piles and other vegetative debris targeted for removal. The likelihood of wildlife occupying a slash pile or similar along a roadside may be lower than those piles located further away. Further, the time of year

in which harvest residuals are collected could influence the potential for impacts to overwintering/hibernating amphibians or reptiles. Direct impacts to special-status amphibians and reptiles from third-party harvest residuals could include mortality of such species through equipment and vehicle strikes, as well as direct removal of woody debris from slash piles occupied by wildlife. Indirect impacts could include accidental spills of fuel or other hazardous materials and temporary habitat modification or loss. These direct and indirect impacts would generally be similar, but typically lesser in extent and intensity than in the case of biomass only thinning projects. See above for additional information regarding these impacts.

Conclusion

GSNR biomass only thinning projects and third-party harvest residuals could have direct and indirect impacts on special-status amphibians and reptiles. However, several PDFs would avoid or minimize such impacts. As discussed in Section 3.9, hazardous materials used during feedstock activities would be transported, used, and disposed of in accordance with all relevant federal, state, and local laws. The proposed project would implement a Stormwater Pollution Prevention Plan (SWPPP) (PDF-GEO-2) during treatment activities that would include steps to prevent, contain, and clean up accidental hazardous material spills. PDF-GEO-1, PDF-GEO-2, PDF-GEO-5, and PDF-GEO-6 require implementation of measures to minimize soil erosion, which would reduce potential indirect impacts on special-status amphibians and reptiles from soil transport to waterbodies. PDF-BIO-1 requires a reconnaissance-level survey of the work area for biomass only thinning projects to determine whether there is potential for special-status amphibians and reptiles to occur. Moreover, PDF-BIO-7 requires focused or protocol-level surveys to identify special-status species prior to work start so that they can be avoided by implementing additional measures (e.g., avoidance of occupied habitat and limited operating periods). PDF-BIO-2 requires mandatory training for all field personnel regarding biological resources to increase awareness of special-status species potentially in the work area and measures to avoid or minimize impacts. PDF-BIO-9 and PDF-BIO-10 as applicable would reduce the likelihood of species impacts by minimizing the direct disturbance and loss of species habitat and functionality. Lastly, PDF-BIO-13 requires that the contractor install no-disturbance buffers around each delineated aquatic resource using high-visibility flagging, fencing, stakes, or similar that would be inspected and maintained through the duration of activities at a given treatment site.

While PDFs would minimize impacts, the above feedstock activities in the Working Area could still result in direct or indirect impacts on special-status amphibians and reptiles if these species and their habitat are not sufficiently avoided after identification and if these species occur in areas not avoided by treatment activities. This would be a potentially significant impact. However, with implementation of **MM-BIO-2** (Compensate for Mortality, Injury, or Disturbance and Loss of Habitat Function for Special-Status Wildlife), the impact would be reduced to **less than significant with mitigation.**

Proposed feedstock activities in the Working Area would not include construction or operation of permanent structures or infrastructure. As a result, no operation-related impacts would occur.

Bats

Special-status bats with potential to occur in the Working Area include, but are not limited to, fringed myotis (*Myotis thysanodes*), northern hoary bat (*Aeorestes cinereus*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and Yuma myotis (*Myotis yumanensis*). Table 3.3-14 provides a comprehensive list of these species known or with potential to occur in the Working Area and considered in this analysis. Special-status bats require specific habitat features for roosting, such as lava tubes, caves, abandoned structures, bridges, and trees with cavities, exfoliating bark, or broad leaves. Most of these species form colonies during the maternity

season from spring to early fall and hibernate in colonies through winter. Colonies vary in size (from a few to several hundred individuals) with maternity colonies composed of adult females and their young. Most bat species are highly sensitive to disturbance. Refer to Table 3 in Appendix C1 for additional species information.

GSNR Biomass Only Thinning Projects

Special-status bats with potential to occur in the Working Area could be impacted by treatment activities of this type if roosting in or near the work area. In general, there are three types of impacts discussed for special-status bats: mortality and injury to individual animals, sensory disturbance (i.e., noise, vibration, and visual), and loss or modification of species habitat. These impact types are discussed below.

Mechanical and manual treatment activities, new road construction, and temporary stream crossings could result in direct mortality (i.e., physical harm) to bats within roosts or maternity colonies from removal of trees, snags, or cavities occupied by bats. The risk of physical harm varies depending on the species and affected habitat. For example, tree-roosting bats would be more vulnerable to treatment activities than bats that roost in riparian areas, caves, cliffs, bridges, or other human-made structures, which would be avoided by the proposed project. Bats that roost in riparian areas would be more vulnerable to disturbance from temporary stream crossing installation, depending on the location and type of vegetation disturbed. In rare instances, special-status bats, such as western red bat (*Lasiurus blosevillii*), may roost in leaf litter on the forest floor and would be at risk for injury or death from GSNR biomass only thinning projects.

Sensory disturbances to special-status bats could occur during mechanical and manual treatment activities, new road construction, and temporary stream crossing installation/use in the Working Area from increased noise, vibrations from heavy equipment use, and increased human activity/presence. Bats roosting in or near the work area during loud activities may exhibit signs of stress through roost displacement, or ceasing critical activities, such as parental care. Bats forage or feed their young at night and therefore would be less at risk as there would be no nighttime treatment activities. Indirect impacts from sensory stress may include a reduction in health and reproductive fitness of individuals and potentially local populations. Sensory disturbances would be localized, temporary, and limited to daylight hours.

Mechanical and manual treatment activities, new road construction, and temporary stream crossing installation in the Working Area have the potential to impact special-status bats through the loss of, or modification to, habitat within the work area. Special-status bats with a potential to occur in the Working Area typically roost in riparian areas, caves, cliffs, bridges, or other human-made structures that would be avoided by the project. Hazardous fuel reduction projects and shaded fuel breaks would principally target smaller trees that typically lack suitable features for roosting (i.e., crevices and cavities), while pruning limbs on the larger remaining trees. Conversely, bats that roost in dead or dying trees and snags would be vulnerable to the loss of roosting habitat where hazardous fuel reduction and salvage activities target these features for intentional removal.

Special-status bats with potential to occur in the Working Area generally forage over wetlands, edge habitats along streams, grassland, and within a variety of wooded habitats gleaning insects from surfaces and capturing insects in flight. Grasslands, riparian areas, and aquatic resources, such as lakes, ponds, meadows, and streams in the Working Area would not be targeted for treatment. However, stream crossing installation (if necessary) could impact aquatic foraging habitat, and equipment operation during treatment activities could disturb forest and woodland vegetation that attracts insects for bats to prey on, thus impacting their foraging habitat.

In contrast, GSNR biomass only thinning projects could also cause indirect beneficial effects to special-status bats by reducing the risk of severe wildfires (megafires) that cause catastrophic loss of habitat. There is abundant evidence that fuel reduction treatments effectively moderate the behavior of wildfires by lowering fireline intensity and by reducing severity and smoke production in treatment areas (Safford et al. 2012; Stephens et al. 2012; Prichard and Kennedy 2014; Lydersen et al. 2017; Hessburg et al. 2019; Prichard et al. 2020, 2021; Jones et al. 2022; North et al. 2021). Reducing the risk of megafires is important for wildlife as these events can homogenize landscapes, reduce overall species richness, and eliminate critical habitat for forest wildlife, including fire-dependent species (White et al. 2019; Kelly et al. 2020; Jones and Tingley 2022; Steel et al. 2022; Stillman et al. 2021).

Third-Party Harvest Residuals

While ground disturbance would be minor and localized, third-party harvest residual collection may occur weeks to months following treatment activities at a given site, allowing sufficient time for special-status bats, such as western red bat, to inhabit slash piles and other vegetative debris targeted for removal. The likelihood of bats occupying a slash pile or similar along a roadside may be lower than those piles located further away. Further, the time of year in which harvest residuals are collected could influence the potential for impacts to overwintering/roosting bats. Direct impacts to special-status bats from third-party harvest residuals could include mortality of such species through equipment and vehicle strikes, as well as direct removal of woody debris from slash piles occupied by wildlife. Indirect impacts could include sensory disturbances from equipment operation and increased human presence and temporary habitat modification or loss. These direct and indirect impacts would generally be similar, but typically lesser in extent and intensity than in the case of biomass only thinning projects. See above for additional information regarding these impacts.

Conclusion

GSNR biomass only thinning projects and third-party harvest residuals could have direct and indirect impacts on special-status bats. However, several PDFs would avoid or minimize such impacts. PDF-BIO-1 requires a reconnaissance-level survey of the proposed work area for biomass only thinning projects to determine whether there is potential for special-status bats to roost on site. Moreover, PDF-BIO-7 requires focused or protocol-level surveys to identify habitat for special-status bats prior to work start for such projects so that it can be avoided by implementing additional measures (e.g., avoidance of occupied roosts and limited operating periods). PDF-BIO-2 requires mandatory training for all field personnel regarding biological resources to increase awareness of special-status species potentially in the Working Area and measures to avoid or minimize impacts. PDF-BIO-9 and PDF-BIO-10 as applicable would reduce the likelihood of impacts to bats by minimizing the direct disturbance and loss of species habitat and functionality.

While PDFs would minimize impacts, the above feedstock activities could still result in direct or indirect impacts on special-status bats if these species and their habitat are not sufficiently avoided after identification and if these species occur in areas not avoided by feedstock activities. This would be a **potentially significant** impact. However, with implementation of **MM-BIO-2** (Compensate for Mortality, Injury, or Disturbance and Loss of Habitat Function for Special-Status Wildlife), the impact would be reduced to less than significant with mitigation.

Proposed feedstock activities in the Working Area would not include construction or operation of permanent structures or infrastructure. As a result, no operation-related impacts would occur.

Burrowing or Denning Wildlife

Special-status burrowing or denning wildlife with potential to occur in the Working Area include, but are not limited to, Sierra Nevada red fox (*Vulpes vulpes necator*), Mount Lyell shrew (*Sorex lyelli*), Sierra Nevada mountain beaver (*Aplodontia rufa californica*), gray wolf (*Canis lupus*), and American badger (*Taxidea taxus*). Table 3.3-14 provides a comprehensive list of these species known or with potential to occur in the Working Area and considered in this analysis. Burrowing or denning wildlife occur in a variety of habitat types, including riparian, woodland, forest, shrubland, and grassland. These species may occupy underground burrows under dense vegetation, tree cavities, rock recesses, hollow logs, and other similar features. Many of these species are nocturnal and may be especially cryptic (e.g., Sierra Nevada mountain beaver and American badger). Sierra Nevada red fox, mountain lion, gray wolf, and American badger are highly mobile species with relatively large home ranges, while other species, such as Mount Lyell shrew, have small home ranges. Refer to Table 3 in Appendix C1 for additional species information.

GSNR Biomass Only Thinning Projects

Special-status burrowing or denning wildlife with potential to occur in the Working Area could be impacted by Sustainable Forest Management projects (treatment activities) of this type if present in or near the Working Area. In general, there are three types of impacts discussed for special-status burrowing or denning wildlife: mortality to individual animals, sensory disturbance (i.e., noise, vibration, and visual), and loss or modification of species habitat. These impact types are discussed below.

Mechanical and manual treatment activities, new road construction, and temporary stream crossings could result in direct mortality (i.e., physical harm) to burrowing or denning wildlife from construction equipment and vehicle strikes. The risk of physical harm varies depending on the species, location, and seasonality. For example, treatment activities and stream crossing installation conducted during the breeding/rearing season could result in direct injury to young or loss of young that are confined to a burrow or den. Species that typically burrow or den in riparian habitat (e.g., Mt. Lyell shrew) would be less at risk of direct harm from treatment activities, which would be restricted from these areas by at least 75 feet as set forth in Section 2.4. Conversely, these riparian-denning species would be at risk if present in the work area during temporary stream crossing installation.

Sensory disturbances to special-status burrowing or denning wildlife could occur during mechanical and manual treatment activities, new road construction, and temporary crossing installation/use in the Working Area from increased noise, vibrations from heavy equipment use, and increased human activity/presence. Wildlife in or near the work area during loud activities may exhibit signs of stress through habitat displacement or avoidance, or ceasing critical activities, such as foraging, reproduction, and parental care (Frid and Dill 2002). Nocturnal wildlife that typically forage or feed their young at night would be less at risk as there would be no nighttime treatment activities. In addition, many species, especially those with expansive home ranges, would have the ability to forage in other suitable areas until temporary treatment activities near their preferred foraging site is complete. Indirect impacts from sensory stress may include a reduction in health and reproductive fitness of individuals and potentially local populations. Sensory would be localized, temporary, and limited to daylight hours.

Mechanical and manual treatment activities, new road construction, and temporary stream crossings in the Working Area also have the potential to impact special-status burrowing or denning wildlife through the loss of, or modification to, habitat within the work area. Heavy equipment and personnel could accidentally collapse burrows and dens occupied by special-status wildlife. This impact would not be limited to the breeding/rearing season for species that occupy burrows year-round (e.g., Mount Lyell shrew and Sierra Nevada mountain beaver). In addition, heavy equipment use could lead to soil compaction and impede recolonization of the treatment area. Sierra Nevada

mountain beaver prefer areas with dense understory vegetation, so changes to the character of these understory features from hazardous fuel reduction and shaded fuel breaks could result in temporary loss of habitat function and exclusion of these species from the treatment site. However, overstory thinning could increase light penetration to the forest floor and increase growth of herbaceous plant species, which may benefit this species in the long-term.

In contrast, treatment activities could also cause indirect beneficial effects to special-status burrowing or denning wildlife by reducing the risk of severe wildfires (megafires) that cause catastrophic loss of habitat. There is abundant evidence that fuel reduction treatments effectively moderate the behavior of wildfires by lowering fireline intensity and by reducing severity and smoke production in treatment areas (Safford et al. 2012; Stephens et al. 2012; Prichard and Kennedy 2014; Lydersen et al. 2017; Hessburg et al. 2019; Prichard et al. 2020, 2021; Jones et al. 2022; North et al. 2021). Reducing the risk of megafires is important for wildlife as these events can homogenize landscapes, reduce overall species richness, and eliminate critical habitat for forest wildlife, including fire-dependent species (White et al. 2019; Kelly et al. 2020; Jones and Tingley 2022; Steel et al. 2022; Stillman et al. 2021).

Third-Party Harvest Residuals

While ground disturbance would be minor and localized, third-party harvest residual collection may occur weeks to months following treatment activities at a given site, allowing sufficient time for special-status burrowing or denning wildlife to inhabit slash piles and other vegetative debris targeted for removal. The likelihood of wildlife occupying a slash pile or similar along a roadside may be lower than those piles located further away. Further, the time of year in which harvest residuals are collected could influence the potential for impacts to overwintering/hibernating wildlife. Direct impacts to special-status burrowing or denning wildlife from third-party harvest residuals could include mortality of such species through equipment/vehicle strikes or unintentional collapsing of occupied burrows or dens. Indirect impacts could include sensory disturbances from equipment operation and increased human presence and temporary habitat modification or loss. These direct and indirect impacts would generally be similar, but typically lesser in extent and intensity than in the case of biomass only thinning projects. See above for additional information regarding these impacts.

Conclusion

GSNR biomass only thinning projects and third-party harvest residuals could have direct and indirect impacts on special-status bats. However, several PDFs would avoid or minimize such impacts. PDF-BIO-1 requires a reconnaissance-level survey of the proposed work area for biomass only thinning projects to determine whether there is potential for special-status burrowing or denning wildlife species to occur on site. Moreover, PDF-BIO-7 requires focused or protocol-level surveys to identify special-status species prior to work start for such projects so that they can be avoided by implementing additional measures (e.g., avoidance of occupied habitat/dens/burrows and limited operating periods). PDF-BIO-2 requires mandatory training for all field personnel regarding biological resources to increase awareness of special-status species potentially in the work area and measures to avoid or minimize impacts. PDF-BIO-9 and PDF-BIO-10 as applicable would reduce the likelihood of impacts to burrowing or denning wildlife by minimizing the direct disturbance and loss of species habitat and functionality.

While PDFs would minimize impacts, the above feedstock activities could still result in direct or indirect impacts on special-status burrowing or denning wildlife if these species and their habitat are not sufficiently avoided after identification and if these species occur in areas not avoided by feedstock activities. This would be a **potentially significant** impact. However, with implementation of **MM-BIO-2** (Compensate for Mortality, Injury, or Disturbance

and Loss of Habitat Function for Special-Status Wildlife), the impact would be reduced to less than significant with mitigation.

Proposed feedstock activities in the Working Area would not include construction or operation of permanent structures or infrastructure. As a result, no operation-related impacts would occur.

Fish and Aquatic Invertebrates

Special-status fish and aquatic invertebrates with potential to occur in the Working Area include, but are not limited to, chinook salmon - upper Klamath and Trinity Rivers ESU (*Oncorhynchus tshawytscha*), Shasta crayfish (*Pacifastacus fortis*), southern steelhead - southern California DPS (*Oncorhynchus mykiss irideus*), California floater (*Anodonta californiensis*), Lower Klamath marbled sculpin (*Cottus klamathensis polyporus*), and Pit-Klamath brook lamprey (*Entosphenus lethophagus*). Table 3.3-14 provides a comprehensive list of these species known or with potential to occur in the Working Area and considered in this analysis. Ponds, lakes, streams, vernal pools, wetlands, and constructed aquatic resources (e.g., canals, impoundments, stock ponds) mapped in the Working Area provide habitat for special-status fish and aquatic invertebrates. Mapped aquatic resources in the Working Area were derived from publicly accessible datasets based largely on coarse mapping (USGS 2024a; USFWS 2024a; FRAP 2015). Aquatic resources not captured by these public datasets may include seasonal and freshwater emergent wetlands, ephemeral drainages, and other features not visible below tree canopy or detectable by aerial mapping.

GSNR Biomass Only Thinning Projects

Sustainable Forest Management projects (treatment activities) of this type would avoid most aquatic resources in the Working Area, including riparian areas, lakes, and perennial streams, by at least 75 feet as set forth in Section 2.4. However, installation of temporary stream crossings (to facilitate access if necessary and practicable) could result in mortality of special-status fish and aquatic invertebrates from ground-disturbing activities if present in the work area. In addition, mechanical and manual treatment activities could impact fish and aquatic invertebrates if present in smaller aquatic resources in or near the work area. In general, there are two types of impacts discussed for special-status fish and aquatic invertebrates: mortality or injury to individual animals and temporary loss or modification of species habitat. These impact types are discussed below.

Ground disturbance from treatment activities, new road construction, and temporary stream crossings could result in soil destabilization, dust accumulation, and transport to nearby waterbodies, which could impact special-status fish and aquatic invertebrates if present. For example, prolonged exposure to high levels of suspended sediment could create a loss of visual capability, disrupting predator avoidance and normal feeding behavior, leading to reduced growth and survival rates in salmonids. Such exposure could also result in a thickening of the gills, potentially causing the loss of respiratory function; in clogging and abrasion of gills; and in increased stress levels, which in turn could reduce tolerance to disease and toxicants (Waters 1995).

GSNR biomass only thinning projects would not involve the use of substantive quantities of hazardous materials or waste products and would be largely limited to fuels and oils that are associated with motorized vehicles and equipment. Use of this equipment and vehicles and any associated maintenance would be done in accordance with applicable federal, state, and local health and safety laws and regulations. However, if not properly contained, these contaminants could be introduced into nearby waterbodies, either directly or through surface runoff. Contaminants may be toxic to fish or cause altered oxygen diffusion rates and may also cause acute and chronic toxicity to aquatic organisms, thereby reducing growth and survival.

Habitat modification from nearby treatment activities, new road construction, or temporary stream crossings (as discussed above) could temporarily reduce the availability of suitable habitat for special-status fish and aquatic invertebrates if present. Avoidance of modified aquatic habitat by moving away from unsuitable conditions is a common fish response to increases in turbidity and sedimentation, unless there are no other options. The settling of fine sediments, depending on the load, could degrade salmonid spawning habitat by reducing the interstitial space between gravel and subsequent oxygen levels critical for successful egg development.

In contrast, treatment activities could also cause indirect beneficial effects to special-status fish and aquatic invertebrates by reducing the risk of severe wildfires (megafires) that cause devastating impacts to aquatic habitat. These impacts, which may persist for many years (Rust et al. 2018; Rhoades et al. 2019), include increased surface runoff, erosion, and conveyance of sediment, ash, pollutants, and debris to surface waters (Bodí et al. 2014) and subsequent impacts to water quality (Abraham et al. 2017) and aquatic ecosystems (Silva et al. 2015). There is abundant evidence that fuel reduction treatments effectively moderate the behavior of wildfires by lowering fireline intensity and by reducing severity and smoke production in treatment areas (Safford et al. 2012; Stephens et al. 2012; Prichard and Kennedy 2014; Lydersen et al. 2017; Hessburg et al. 2019; Prichard et al. 2020, 2021; Jones et al. 2022; North et al. 2021).

Third-Party Harvest Residuals

Collecting harvest residuals would involve minor ground disturbance in previously disturbed treatment areas at least 75 feet from aquatic habitat. Thus, there would be no direct impacts to special-status fish and aquatic invertebrates from this activity. Indirect impacts to special-status fish could include accidental spills of fuel or other hazardous materials but are unlikely to occur due to harvest residuals being collected at least 75 feet from aquatic habitat. These direct and indirect impacts would generally be similar, but typically lesser in extent and intensity than in the case of biomass only thinning projects. See above for additional information regarding these impacts.

Conclusion

GSNR biomass only thinning projects and third-party harvest residuals could have direct and indirect impacts on special-status fish and aquatic invertebrates. However, several PDFs would avoid or minimize such impacts. As discussed in Section 3.9, hazardous materials used during treatment activities would be transported, used, and disposed of in accordance with all relevant federal, state, and local laws. Biomass only thinning projects would also implement a Stormwater Pollution Prevention Plan (SWPPP) or equivalent document (PDF-GEO-3 and PDF-GEO-4) during treatment activities that would include steps to prevent, contain, and clean up hazardous material spills that could result from treatment activities. PDF-GEO-1, PDF-GEO-2, PDF-GEO-5 and PDF-GEO-6 as applicable require implementation of measures to minimize soil erosion, which would reduce potential indirect impacts on special-status fish and aquatic invertebrates from soil transport to waterbodies. PDF-BIO-1 requires a reconnaissance-level survey of the work area for biomass only thinning projects to determine whether there is potential for special-status fish and aquatic invertebrates to occur. Moreover, PDF-BIO-7 requires focused or protocol-level surveys to identify special-status species prior to work start for such projects so that they can be avoided by implementing additional measures (e.g., avoidance of occupied habitat and limited operating periods). PDF-BIO-2 requires mandatory training for all field personnel regarding biological resources to increase awareness of special-status species potentially in the work area and measures to avoid or minimize impacts. PDF-BIO-9 and PDF-BIO-10 as applicable would reduce the likelihood of impacts to fish and aquatic invertebrates by minimizing the direct disturbance and loss of species habitat and functionality. Lastly, PDF-BIO-13 requires that the contractor install no-disturbance buffers around each delineated aquatic resource using high-visibility flagging, fencing, stakes, or similar that would be inspected and maintained through the duration of activities at a given treatment site.

While PDFs would minimize impacts, the above feedstock activities could still result in direct or indirect impacts to special-status fish and aquatic invertebrates if these species and their habitat are not sufficiently avoided after identification and if these species occur in areas that are not avoided by feedstock activities. This would be a **potentially significant** impact. However, with implementation of **MM-BIO-2** (Compensate for Mortality, Injury, or Disturbance and Loss of Habitat Function for Special-Status Wildlife), the impact would be reduced to less than significant with mitigation.

Proposed feedstock activities in the Working Area would not include construction or operation of permanent structures or infrastructure. As a result, no operation-related impacts would occur.

Ground- and Cliff-Nesting/Breeding Wildlife

Special-status ground- and cliff-nesting/breeding wildlife with potential to occur in the Working Area include, but are not limited to, Sierra Nevada snowshoe hare (*Lepus americanus tahoensis*), western black-tailed jackrabbit (*Lepus townsendii townsendii*), greater sandhill crane (*Antigone canadensis tabida*), and American peregrine falcon (*Falco peregrinus anatum*). Table 3.3-14 provides a comprehensive list of these species known or with potential to occur in the Working Area and considered in this analysis. Habitat for special-status ground- and cliff-nesting/breeding wildlife in the Working Area includes woodland, forest, riparian, scrub, and open meadow or grassland habitat. Wetlands, shorelines, and cliffs are also important for certain ground- and cliff-nesting/breeding species, such as the greater sandhill crane and American peregrine falcon, respectively. Special-status ground- and cliff-nesting/breeding wildlife nest in cups or mounds composed of plant material or ground scrapes below dense vegetation, logs, or other woody debris. These species may nest as individual pairs (e.g., northern harrier [*Circus hudsonius*] and prairie falcon [*Falco mexicanus*]), or in colonies (e.g., California gull [*Larus californicus*] and black tern [*Chlidonias niger*]). Some ground- and cliff-nesting/breeding birds are winter migrants with limited breeding ranges in California, such as the greater sandhill crane, black tern, and harlequin duck (*Histrionicus histrionicus*). Sierra Nevada snowshoe hare and western black-tailed jackrabbit are present year-round and most active at twilight (crepuscular) or night (nocturnal). Refer to Table 3 in Appendix C1 for additional species information.

GSNR Biomass Only Thinning Projects

Special-status ground- and cliff-nesting/breeding wildlife with potential to occur in the Working Area could be impacted by treatment activities of this type if present in or near the work area. In general, there are three types of impacts discussed for special-status ground- and cliff-nesting/breeding wildlife: mortality and injury to individual animals, sensory disturbance (i.e., noise, vibration, and visual), and loss or modification of species habitat. These impact types are discussed below.

Mechanical and manual treatment activities during GSNR biomass thinning only projects, new road construction, and temporary stream crossings could result in direct injury or mortality (i.e., physical harm) to ground- and cliff-nesting/breeding wildlife from construction equipment and vehicle strikes. The risk of physical harm varies depending on the species, location, and seasonality. For example, treatment activities or stream crossing installation during the breeding season could result in direct injury or mortality to young or loss of eggs that are confined to a nest. Conversely, species that typically nest in wetlands (yellow-headed blackbird [*Xanthocephalus xanthocephalus*]), grassland and meadows (northern harrier), or shrubland (greater sage-grouse [*Centrocercus urophasianus*]) among forest and woodland habitat would be less at risk of direct harm as mechanical and manual treatment activities would not target these areas. Whereas, these species would be at a higher risk of direct harm if present in or near the work area during stream crossing installation.

Sensory disturbances to special-status ground- and cliff-nesting/breeding wildlife could occur during mechanical and manual treatment activities, new road construction, and temporary stream crossing installation/use in the Working Area from increased noise, vibrations from heavy equipment use, and increased human activity/presence. Wildlife in or near the work area during loud activities may exhibit signs of stress through habitat displacement or avoidance, or ceasing critical activities, such as foraging, reproduction, and parental care (Frid and Dill 2002). Nocturnal wildlife, such as snowshoe hares and jackrabbits, that typically forage or feed their young at night would be less at risk as there would be no nighttime feedstock activities. In addition, many species would have the ability to forage in other suitable areas until feedstock activities near their preferred foraging site are complete. Indirect impacts from sensory stress may include a reduction in health and reproductive fitness of individuals and potentially local populations. Sensory disturbances would be localized, temporary, and limited to daylight hours.

Mechanical and manual treatment activities, new road construction, and temporary stream crossing installation in the Working Area have the potential to impact wildlife through the loss of, or modification to, habitat within the work area. Heavy equipment and personnel could unintentionally remove understory vegetation used by special-status wildlife. This impact would not be limited to the breeding/rearing season for species that utilize ground scrapes year-round (e.g., Sierra Nevada snowshoe hare and western black-tailed jackrabbit). Nonetheless, many of the special-status ground- and cliff-nesting/breeding wildlife that may occur in the Working Area are found in open vegetation communities that would not be targeted for treatment.

In contrast, treatment activities could also cause indirect beneficial effects to special-status ground- and cliff-nesting/breeding wildlife by reducing the risk of severe wildfires (megafires) that cause catastrophic loss of habitat. There is abundant evidence that fuel reduction treatments effectively moderate the behavior of wildfires by lowering fireline intensity and by reducing severity and smoke production in treatment areas (Safford et al. 2012; Stephens et al. 2012; Prichard and Kennedy 2014; Lydersen et al. 2017; Hessburg et al. 2019; Prichard et al. 2020, 2021; Jones et al. 2022; North et al. 2021). Reducing the risk of megafires is important for wildlife as these events can homogenize landscapes, reduce overall species richness, and eliminate critical habitat for forest wildlife, including fire-dependent species (White et al. 2019; Kelly et al. 2020; Jones and Tingley 2022; Steel et al. 2022; Stillman et al. 2021).

Third-Party Harvest Residuals

While ground disturbance would be minor and localized, third-party harvest residual collection may occur weeks to months following treatment activities at a given site, allowing sufficient time for special-status ground-nesting wildlife to inhabit slash piles and other vegetative debris targeted for removal. The likelihood of wildlife occupying a slash pile or similar along a roadside may be lower than those piles located further away. Further, the time of year in which harvest residuals are collected could influence the potential for impacts to ground nests. Cliff-nesting/breeding wildlife is not expected to occupy slash piles but could be impacted by this activity if present in the vicinity. Direct impacts to special-status ground- and cliff-nesting/breeding wildlife from third-party harvest residuals could include mortality of such species through equipment and vehicle strikes, as well as direct removal of vegetation occupied by these species. Indirect impacts could include sensory disturbances from equipment operation and increased human presence and habitat modification or loss. These direct and indirect impacts would generally be similar, but typically lesser in extent and intensity than in the case of biomass only thinning projects. See above for additional information regarding these impacts.

Conclusion

GSNR biomass only thinning projects and third-party harvest residuals could have direct and indirect impacts on special-status bats. However, several PDFs would avoid or minimize such impacts. PDF-BIO-1 requires a reconnaissance-level survey of the proposed work area for biomass only thinning projects to determine whether there is potential for special-status ground- and cliff-nesting/breeding wildlife to occur on site. Moreover, PDF-BIO-7 requires focused or protocol-level surveys to identify special-status species prior to work start for such projects so that they can be avoided by implementing additional measures (e.g., pre-activity surveys, avoidance of occupied habitat/dens/burrows and limited operating periods). PDF-BIO-2 requires mandatory training for all field personnel regarding biological resources to increase awareness of special-status species potentially in the work area and measures to avoid or minimize impacts. Active nests of ground- and cliff-nesting/breeding birds would be protected from noise or visual impacts through the implementation of PDF-BIO-8, which involves pre-treatment surveys for active bird nests prior to commencement of biomass only thinning project work, the establishment of no-disturbance buffers until the nest has fledged or is deemed inactive, and/or monitoring by a biological monitor to ensure that treatment-related noise is not disturbing an active nest. Lastly, PDF-BIO-9 and PDF-BIO-10 as applicable would reduce the likelihood of impacts to ground- and cliff-nesting/breeding wildlife by minimizing the direct disturbance and loss of species habitat and functionality.

While PDFs would minimize impacts, the above feedstock activities could still result in direct or indirect impacts on special-status ground- and cliff-nesting/breeding wildlife if these species and their habitat are not sufficiently avoided after identification and if these species occur in areas not avoided by feedstock activities. This would be a **potentially significant** impact. However, with implementation of **MM-BIO-2** (Compensate for Mortality, Injury, or Disturbance and Loss of Habitat Function for Special-Status Wildlife), the impact would be reduced to less than significant with mitigation.

Proposed feedstock activities in the Working Area would not include construction or operation of permanent structures or infrastructure. As a result, no operation-related impacts would occur.

Terrestrial Invertebrates

Special-status terrestrial invertebrates with potential to occur in the Working Area include, but are not limited to, Crotch's bumble bee (*Bombus crotchii*), western bumble bee (*Bombus occidentalis*), Bing's checkerspot butterfly (*Euphydryas editha bingi*), and Tuolumne sideband snail (*Monadenia tuolumneana*). Table 3.3-14 provides a comprehensive list of these species known or with potential to occur in the Working Area and considered in this analysis. Various habitat types in the Working Area may support special-status terrestrial invertebrates, although the geographic range for many of these species is extremely limited or poorly understood. For example, Bing's checkerspot butterfly is only known from the Warner Mountains in the Modoc National Forest, but there remains scientific uncertainty around the validity of its status as a genetically distinct subspecies (Crabtree, pers. comm., 2023; Emmel 1998). Keeled sideband (*Monadenia circumcarinata*) is endemic to limestone outcrops and talus slopes of the Tuolumne River canyon, and hirsute Sierra sideband snail (*Monadenia mormonum hirsuta*) is only known from few basaltic outcrops in Tuolumne County. Conversely, Crotch's bumble bee and western bumble bee are generalist species that occur in meadows, grassland, chaparral, and/or scrubland, provided there is sufficient foraging cover in spring through fall and overwintering habitat. Special-status terrestrial invertebrates may nest or overwinter in a variety of habitat features, including tree cavities, underground burrows, leaf litter, rock outcrops, and downed woody debris. Refer to Table 3 in Appendix C1 for additional species information.

GSNR Biomass Only Thinning Projects

Special-status invertebrate species with potential to occur in the Working Area could be impacted by treatment activities of this type if present in or near the work area. In general, there are two types of impacts discussed for special-status invertebrates: mortality and injury to individual animals and loss or modification of species habitat. These impact types are discussed below.

Mechanical and manual treatment activities, new road construction, and temporary stream crossings could result in direct mortality (i.e., physical harm) to special-status invertebrates from construction equipment and vehicle strikes and foot traffic. The risk of harm varies depending on the species, location, and seasonality. As discussed above, many special-status invertebrates are restricted to localized and/or unique sites that may not be targeted for treatment. While there are limited data for many special-status invertebrates, it is likely that flying invertebrates would be able to flee from moving equipment during the flight season, while overwintering or larval species, ground-nesting colonies, and snails may be unable to flee if present in the work area during treatment activities or stream crossing installation.

Mechanical and manual treatment activities, new road construction, and temporary stream crossing installation/use in the Working Area also have the potential to impact wildlife through the loss of, or modification to, habitat within the work area. Heavy equipment and personnel could unintentionally remove or damage nesting or overwintering habitat (e.g., tree cavities, burrows, and leaf litter) and understory vegetation used by pollinator species (e.g., bumble bees and butterflies). This impact would not be limited to a particular season as special-status invertebrates could be present year-round at a given site assuming suitable habitat is present.

In contrast, treatment activities could also cause indirect beneficial effects to special-status invertebrates by reducing the risk of severe wildfires (megafires) that cause catastrophic loss of habitat. There is abundant evidence that fuel reduction treatments effectively moderate the behavior of wildfires by lowering fireline intensity and by reducing severity and smoke production in treatment areas (Safford et al. 2012; Stephens et al. 2012; Prichard and Kennedy 2014; Lydersen et al. 2017; Hessburg et al. 2019; Prichard et al. 2020, 2021; Jones et al. 2022; North et al. 2021). Reducing the risk of megafires is important for wildlife as these events can homogenize landscapes, reduce overall species richness, and eliminate critical habitat for forest wildlife, including fire-dependent species (White et al. 2019; Kelly et al. 2020; Jones and Tingley 2022; Steel et al. 2022; Stillman et al. 2021).

Third-Party Harvest Residuals

While ground disturbance would be minor and localized, third-party harvest residual collection may occur weeks to months following treatment activities at a given site, allowing sufficient time for special-status invertebrates to inhabit slash piles and other vegetative debris targeted for removal. The likelihood of wildlife occupying a slash pile or similar along a roadside may be lower than those piles located further away. Further, the time of year in which harvest residuals are collected could influence the potential for impacts to overwintering or nesting invertebrates, such as listed bumble bees. Direct impacts to special-status invertebrates from third-party harvest residuals could include mortality of such species through equipment/vehicle strikes, removal of vegetation or slash piles occupied by these species, or unintentional removal of nesting or overwintering habitat. Indirect impacts could include habitat modification or loss. These direct and indirect impacts would generally be similar, but typically lesser in extent and intensity than in the case of biomass only thinning projects. See above for additional information regarding these impacts.

Conclusion

GSNR biomass only thinning projects and third-party harvest residuals could have direct and indirect impacts on special-status invertebrates. However, several PDFs would avoid or minimize such impacts. PDF-BIO-1 requires a reconnaissance-level survey of the proposed work area for biomass only thinning projects to determine whether there is potential for special-status invertebrates to occur on site. Moreover, PDF-BIO-7 requires focused or protocol-level surveys to identify special-status species prior to work start for such projects so that they can be avoided by implementing additional measures (e.g., pre-activity surveys, avoidance of occupied or suitable habitat). PDF-BIO-2 requires mandatory training for all field personnel regarding biological resources to increase awareness of special-status species potentially in the work area and measures to avoid or minimize impacts. Special-status bumble bees and their habitat would be protected through implementation of PDF-BIO-11. Lastly, PDF-BIO-9 and PDF-BIO-10 as applicable would reduce the likelihood of impacts to special-status invertebrates by minimizing the direct disturbance and loss of species habitat and functionality.

While PDFs would minimize impacts, the above feedstock activities could still result in direct or indirect impacts on special-status terrestrial invertebrates if these species and their habitat are not sufficiently avoided after identification and if these species occur in areas or habitats that are not avoided by feedstock activities. This would be a **potentially significant** impact. However, with implementation of **MM-BIO-2** (Compensate for Mortality, Injury, or Disturbance and Loss of Habitat Function for Special-Status Wildlife), the impact would be reduced to less than significant with mitigation.

Proposed feedstock activities in the Working Area would not include construction or operation of permanent structures or infrastructure. As a result, no operation-related impacts would occur.

Tree-, Shrub-, and Cavity-nesting Wildlife

Special-status tree-, shrub- and cavity-nesting wildlife with potential to occur in the Working Area include, but are not limited to, spotted owls (*Strix occidentalis occidentalis* and *S. o. caurina*), California wolverine (*Gulo gulo*), martens (*Martes caurina, M. c. humboldtensis,* and *M. c. sierrae*), fishers (*Pekania pennanti*), northern goshawk (*Accipiter gentilis*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and ringtail (*Bassariscus astutus*). Table 3.3-14 provides a comprehensive list of these species known or with potential to occur in the Working Area and considered in this analysis. Coniferous forest, riparian woodland, shrub, grassland, and many other habitat types could be occupied by special-status tree-, shrub-, and cavity-nesting wildlife. However, some of these species strictly nest in riparian habitat (e.g., western yellow-billed cuckoo, yellow-breasted chat [*Icteria virens*], and willow flycatcher [*Empidonax traillii*]). Numerous bird species nest in trees (e.g., bald eagle [*Haliaeetus leucocephalus*]) or shrubs (Brewer's sparrow [*Spizella breweri*]). Cavity-nesting wildlife includes martens, fishers, ringtail, and other bird species (Lewis's woodpecker and spotted owls). Most of these species breed and rear their young in early spring through late summer, usually as pairs or some as colonies (e.g., tricolored blackbird [*Agelaius tricolor*]). Some of these species are nocturnal hunters (e.g., spotted owls and ringtail) and/or highly mobile outside of the breeding season (e.g., ringtail and California wolverine). Refer to Table 3 in Appendix C1 for additional species information.

GSNR Biomass Only Thinning Projects

Special-status tree-, shrub-, and cavity-nesting wildlife with potential to occur in the Working Area could be impacted by treatment activities of this type if present in or near the work area. In general, there are three types of impacts discussed for special-status tree-, shrub-, and cavity-nesting wildlife: mortality and injury to individual animals,

sensory disturbance (i.e., noise, vibration, and visual), and loss or modification of species habitat. These impact types are discussed below.

Mechanical and manual treatment activities during GSNR biomass thinning only projects, new road construction, and temporary stream crossing installation could result in direct injury or mortality (i.e., physical harm) to tree-shrub-, and cavity-nesting wildlife from construction equipment and vehicle strikes, as well as direct removal of trees, shrubs, snags, or cavities occupied by wildlife. The risk of physical harm varies depending on the species, location, and seasonality. For example, fishers and martens that are closely tied to dense forests with complex understories would be more vulnerable to treatment activities or stream crossing installation in these areas. In addition, vegetation removal or trimming during the breeding/rearing season could result in direct injury or mortality to young or loss of eggs that are confined to a nest. Riparian tree- and shrub-nesting species would be less at risk of direct harm as mechanical and manual treatment activities would be restricted from these areas by at least 75 feet as set forth in Section 2.4. Whereas these riparian-dwelling species would be at a higher risk of direct harm if present in or near the work area during stream crossing installation.

Sensory disturbances to special-status tree-, shrub-, and cavity-nesting wildlife could occur during mechanical and manual treatment activities, new road construction, and temporary stream crossing installation/use in the Working Area from increased noise, vibrations from heavy equipment use, and increased human activity/presence. Wildlife in or near the work area during loud activities may exhibit signs of stress through habitat displacement or avoidance, or ceasing critical activities, such as foraging, reproduction, and parental care (Frid and Dill 2002). For example, loud construction noise could alter the behaviors of adult birds nesting in the vicinity of the work area, such that eggs and young would be left alone for long periods of time, or even abandoned, resulting in potential loss of young or eggs. Nocturnal wildlife that typically forage or feed their young at night would be less at risk as there would be no nighttime feedstock activities. In addition, many species would have the ability to forage in other suitable areas until feedstock activities near their preferred foraging site are complete. Indirect impacts from sensory stress may include a reduction in health and reproductive fitness of individuals and potentially local populations. Sensory disturbances would be localized, temporary, and limited to daylight hours.

Mechanical and manual treatment activities, new road construction, and temporary stream crossing installation in the Working Area have the potential to impact special-status tree-, shrub-, and cavity-nesting wildlife through the loss of, or modification to, habitat within the work area. These activities could result in reduced canopy cover and reduced understory complexity if canopy trees, understory trees, shrubs, snags, and other forest fuels are intentionally removed. Alterations to the complexity of the understory could lead to the temporary loss of habitat functionality for some wildlife species, such as martens and fishers. Further, removal of woody debris and snags that provide critical refugia could subject these species to a higher risk of predation. Because many special-status wildlife species have specific habitat requirements, including high canopy cover and complex understory structure, changes to the character of these understory features could result in temporary loss of habitat function and exclusion of these species from the treatment site.

In contrast, treatment activities could also cause indirect beneficial effects to special-status tree-, shrub-, and cavity-nesting wildlife by removing unnatural buildup of litter, woody debris and fuel ladders, and thinning live trees and shrubs (while retaining medium and large-sized trees). This would open the canopy where tree or shrub densities are uncharacteristic of healthy or desired examples of the vegetation type and result in both immediate and long-term benefits to wildlife. Overstory thinning may result in increased light penetration and increased growth of herbaceous plant species, which may benefit some wildlife, such as seed-eating birds (McIver et al. 2013). In general, treatment activities would likely reduce the risk of severe wildfires (megafires) that cause catastrophic loss of habitat. There is abundant evidence that fuel reduction treatments effectively moderate the behavior of wildfires

by lowering fireline intensity and by reducing severity and smoke production in treatment areas (Safford et al. 2012; Stephens et al. 2012; Prichard and Kennedy 2014; Lydersen et al. 2017; Hessburg et al. 2019; Prichard et al. 2020, 2021; Jones et al. 2022; North et al. 2021). Reducing the risk of megafires is important for wildlife as these events can homogenize landscapes, reduce overall species richness, and eliminate critical habitat for forest wildlife, including old-growth forests that support spotted owls (White et al. 2019; Kelly et al. 2020; Jones et al. 2022; Jones and Tingley 2022; Steel et al. 2022; Stillman et al. 2021).

Third-Party Harvest Residuals

While ground disturbance would be minor and localized, third-party harvest residual collection may occur weeks to months following treatment activities at a given site, allowing sufficient time for special-status tree-, shrub-, and cavity-nesting wildlife to inhabit slash piles and other vegetative debris targeted for removal. The likelihood of wildlife occupying a slash pile or similar along a roadside may be lower than those piles located further away. Further, the time of year in which harvest residuals are collected could influence the potential for impacts to nesting wildlife. Direct impacts to special-status tree-, shrub-, and cavity-nesting wildlife from third-party harvest residuals could include mortality of such species through equipment and vehicle strikes. Indirect impacts could include sensory disturbances from equipment operation and increased human presence and temporary habitat loss or modification. These direct and indirect impacts would generally be similar, but typically lesser in extent and intensity than in the case of biomass only thinning projects. See above for additional information regarding these impacts.

Conclusion

GSNR biomass only thinning projects and third-party harvest residuals could have direct and indirect impacts on special-status tree-, shrub-, and cavity-nesting wildlife. However, several PDFs would avoid or minimize such impacts. PDF-BIO-1 requires a reconnaissance-level survey of the proposed work area for biomass only thinning projects to determine whether there is potential for special-status tree-, shrub-, and cavity-nesting species to occur on site. Moreover, PDF-BIO-7 requires focused or protocol-level surveys to identify special-status species prior to work start for such projects so that they can be avoided by implementing additional measures (e.g., avoidance of occupied habitat and limited operating periods). PDF-BIO-2 requires mandatory training for all field personnel regarding biological resources to increase awareness of special-status species potentially in the work area and measures to avoid or minimize impacts. PDF-BIO-9 and PDF-BIO-10 would as applicable reduce the likelihood of impacts to tree-, shrub-, and cavity-nesting species by minimizing the direct disturbance and loss of species habitat and functionality. Active nests of special-status tree-, shrub-, and cavity-nesting bird species would be protected from noise or visual impacts through the implementation of PDF-BIO-8, which involves surveys for active nests prior to the commencement of biomass thinning project work, the establishment of no-disturbance buffers until the nest has fledged or is deemed inactive, and/or monitoring by a biological monitor to ensure that construction-related noise is not disturbing an active nest.

While PDFs would minimize impacts, the above feedstock activities could still result in direct or indirect impacts to tree-, shrub-, and cavity-nesting special-status wildlife if these species and their habitat are not sufficiently avoided after identification and if these species occur in areas not avoided by treatment activities. This would be **a potentially significant** impact. However, with implementation of **MM-BIO-2** (Compensate for Mortality, Injury, or Disturbance and Loss of Habitat Function for Special-Status Wildlife), the impact would be reduced to less than significant with mitigation.

Proposed feedstock activities in the Working Area would not include construction or operation of permanent structures or infrastructure. As a result, no operation-related impacts would occur.

Ungulates

Only one special-status ungulate, Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*), has potential to occur in the Working Area. This species occurs as five disjunct populations on the eastern slopes of the southern Sierra Nevada within Tuolumne, Mono, Fresno, Inyo, and Tulare counties. Sierra Nevada bighorn sheep are associated with canyons and other open areas that are generally steep, rocky, and sparsely-vegetated. As a prey species for mountain lions (*Puma concolor*), Sierra Nevada bighorn sheep typically avoid forest, woodland, or other densely-vegetated habitat to evade predation. These species are highly mobile with expansive home ranges (approximately 38 square miles for males) (USFWS 2007) within which they migrate between summer and winter ranges to avoid deep snow.

GSNR Biomass Only Thinning Projects

Mechanical and manual treatment activities during GSNR biomass thinning only projects, new road construction, and temporary stream crossings would involve the use of heavy equipment and vehicles. These activities would not result in impacts to Sierra Nevada bighorn sheep as this highly mobile species would be able to leave the area if present. The proposed project does not involve permanent fence installation and would not exclude these species from suitable habitat. In general, treatment activities could cause indirect beneficial effects by reducing the risk of severe wildfires that cause catastrophic loss of habitat.

Third-Party Harvest Residuals

Collecting harvest residuals would be limited to discrete locations previously disturbed by treatment activities. Similar to GSNR biomass thinning only projects, there would be no direct or indirect impacts to Sierra Nevada bighorn sheep from third-party harvest residuals. See above for additional information.

Conclusion

While no project-related impacts are anticipated, treatment activities could still result in indirect impacts to Sierra Nevada bighorn sheep if habitat for this species is not sufficiently avoided by feedstock activities. This would be a **potentially significant** impact. However, with implementation of **MM-BIO-2** (Compensate for Mortality, Injury, or Disturbance and Loss of Habitat Function for Special-Status Wildlife), the impact would be reduced to less than significant with mitigation.

Proposed feedstock activities in the Working Area would not include construction or operation of permanent structures or infrastructure. As a result, no operation-related impacts would occur.

Wood Pellet Production

Lassen Facility

All of the 15 special-status wildlife species known to occur in the region of the Lassen Facility site were determined to have a low potential to occur or are not expected to occur due to the lack of suitable habitat or the presence of very low quality habitat within or adjacent to the site, the lack of documented occurrences near the site, or due to the site being outside of the species' known geographic or elevation range. As such, project construction and operational impacts to special-status plant species, if any would occur on the site, would not be considered substantial and would, therefore, would be considered **less than significant**. No mitigation is required.

Tuolumne Facility

Seven special-status wildlife species are present or have a potential to occur on the Tuolumne Facility site: California red-legged frog, California tiger salamander, northwestern pond turtle, tricolored blackbird, pallid bat, Townsend's big-eared bat, and western red bat. Additional information on special-status wildlife species and their habitat at the Tuolumne Facility site is provided in Appendix C5. The seven special-status wildlife species with potential to occur on the Tuolumne Facility site could be impacted by project activities if present in or near the work area. Potential impacts to these species are discussed below.

California Red-legged Frog. The Tuolumne Facility site is located within the geographic range of California red-legged frog, a federally threatened species and CDFW species of special concern. Based on a field assessment and coordination with the USFWS, some wetlands in the northern portion of the site could provide habitat for California red-legged frog. In addition, riparian habitat and adjacent uplands may provide dispersal habitat for this species. Project activities at the Tuolumne Facility site would involve the use of heavy equipment, which could lead to accidental crushing of frogs if dispersing through the work area from suitable habitat nearby. These potential impacts to California red-legged frog would be avoided or minimized with implementation of **MM-BIO-2**, **MM-BIO-8**, and **MM-BIO-13**.

California Tiger Salamander. The Tuolumne Facility site is located at the eastern extent of the geographic range of California tiger salamander (Central Valley DPS), a federally and state threatened species. Based on a field assessment and coordination with the USFWS, some wetlands on the site could provide habitat for California tiger salamander. In addition, riparian habitat and adjacent uplands may provide dispersal habitat for this species. Project activities at the Tuolumne Facility site would involve the use of heavy equipment, which could lead to accidental crushing of salamanders if dispersing through the work area from suitable habitat nearby. These potential impacts to California tiger salamander would be avoided or minimized with implementation of **MM-BIO-2**, **MM-BIO-8**, and **MM-BIO-13**.

Northwestern Pond Turtle. Northwestern pond turtle is a CDFW species of special concern that was observed in the pond in the northern portion of the Tuolumne Facility site. In addition, riparian habitat and adjacent uplands surrounding the pond provide nesting habitat for this species. No ground-disturbance or vegetation removal is proposed within riparian and wetland habitat surrounding the pond. Aquatic resources and the surrounding uplands within the proposed footprint provide low quality habitat for northwestern pond turtle due to a lack of cover and basking sites and limited suitable nesting habitat nearby. However, project activities at the Tuolumne Facility site would involve the use of heavy equipment, which could lead to accidental crushing of nests or turtles if dispersing through the work area from suitable habitat nearby. These potential impacts to northwestern pond turtle would be avoided or minimized with implementation of **MM-BIO-2**, **MM-BIO-8**, and **MM-BIO-11**.

Tricolored Blackbird. Tricolored blackbird is a state threatened species with a potential to occur on the Tuolumne Facility site. The pond and surrounding riparian and wetland habitat in the northern portion of the site provide suitable nesting habitat for tricolored blackbird. This species is not expected to nest within or adjacent to the work area, which lacks suitable vegetation and cover to support a nesting colony. No ground-disturbance or vegetation removal is proposed within suitable nesting habitat in the northern portion of the site. Should this species nest on site prior to construction, potential indirect impacts could include abandonment of active nests by adults due to construction-related noise. These potential impacts to tricolored blackbird would be avoided or minimized with implementation of **MM-BIO-8**, **MM-BIO-10**, and **MM-BIO-12**.

Roosting Bats (including Pallid Bat, Townsend's Big-eared Bat, and Western Red Bat). The Tuolumne Facility site provides potential roosting habitat for three special-status bats (pallid bat, Townsend's big-eared bat, and western red bat) and other native bats protected by regulations defined in the CFGC. Mature cottonwood trees (or other trees with exfoliating bark, crevices, and/or sufficient foliage) in the riparian woodland and abandoned structures on site provide roosting habitat, and aquatic resources on the site provide foraging habitat. No ground-disturbance or vegetation removal is proposed within riparian and wetland habitat surrounding the pond. Should bats roost on site prior to construction, potential impacts could include roost removal due to structure demolition and/or roost abandonment due construction-related noise. These potential impacts to roosting bats, including pallid bat and western red bat, would be avoided or minimized with implementation of **MM-BIO-8** and **MM-BIO-14**.

While several mitigation measures would minimize impacts, project activities at the Tuolumne Facility site could still result in direct or indirect impacts to special-status wildlife if these species and their habitat are not sufficiently avoided and if these species occur in areas not avoided by project activities. This would be a **potentially significant** impact. However, with implementation of **MM-BIO-2** (Compensate for Mortality, Injury, or Disturbance and Loss of Habitat Function for Special-Status Wildlife), the impact would be reduced to less than significant with mitigation.

Once all proposed facilities associated with the Tuolumne Facility site are constructed, operation and maintenance impacts would not be substantially different than existing conditions (i.e., noise) or impacts that are potentially significant would be reduced to less than significant with mitigation (i.e., lighting). Further, the proposed Tuolumne Facility site is in an area that is primarily disturbed, developed, or adjacent to an active wood shavings plant.

As stated in Chapter 3.11, Noise, there would not be a significant increase in the outdoor ambient noise levels according to the Tuolumne County standards. As discussed in Chapter 3.1, Aesthetics, development and operation of the Tuolumne Facility site would introduce new sources of lighting that could cause light trespass and contribute to "sky glow." However, the Tuolumne Facility site is adjacent to an existing, active wood shavings plant, which produces light and glare. While the proposed project would require exterior lighting for operations and safety at the Tuolumne Facility site, which could be a potentially significant impact, implementation of **MM-AES-1** would reduce this potential impact to less than significant. As such, any impacts to special-status wildlife species from additional activity or person(s) associated with maintenance and operation of the proposed Tuolumne Facility site would be **less than significant**.

Transport to Market

Port of Stockton

Eight special-status wildlife species are present or have a potential to occur on or adjacent to the Port site: green sturgeon - southern DPS, burrowing owl, Swainson's hawk, white-tailed kite, Delta smelt, loggerhead shrike, steelhead – Central Valley DPS, and chinook salmon - Central Valley fall/late fall-run ESU. Additional information on special-status wildlife species and their habitat at the Port site is provided in Section 3.3.1.4, Port of Stockton. The eight special-status wildlife species with potential to occur on the Port site could be impacted by project activities if present in or near the work area. Potential impacts to these species are discussed below.

Aquatic Species (Green Sturgeon, Delta Smelt, Steelhead, and Chinook Salmon). Green sturgeon, Delta smelt, steelhead, and Chinook salmon are federally-listed, state-listed or protected, and/or SJCOG covered species that could occur in the Stockton Deepwater Channel (San Joaquin River) adjacent to the Port site. The proposed project does not involve any construction or improvements to existing facilities within or over the San Joaquin River. Two large domes would be constructed at the Port site for storing and transporting pellets to a shiploader. The domes

would feed pellets to the shiploader via a gravity conveyor, and the shiploader would transfer the pellets to cargo ships for export. Pellet transport to cargo ships would take place in a sealed/contained system with no potential for pellets to enter nearby waterbodies. There would be no direct or indirect impacts to the San Joaquin River resulting from pellet storage, transport, and export. As such, impacts to special-status aquatic species at the Port site are not anticipated.

Burrowing Owl. Burrowing owl is a state species of special concern and SJCOG covered species that could occur at the Port site. Although no active burrow complexes were identified on site during the field survey, this species is known to occupy highly disturbed sites and may nest in constructed features, such as downspouts, storm drains, or similar. Should burrowing owl nest or overwinter at the Port site prior to construction activities, this species could be impacted by the proposed project. Direct impacts could include mortality or injury to owls or destruction of burrows/nests if nesting in or adjacent to a construction site prior to ground-disturbing activities. In addition, loud construction activities could cause an adult owl to abandon an active nest that is in close proximity to construction, which could lead to nest failure. These potential impacts to burrowing owl would be avoided or minimized with implementation of **MM-BIO-17**, **MM-BIO-18**, and **MM-BIO-20**.

Nesting Birds (including Swainson's Hawk, White-tailed Kite, and Loggerhead Shrike). Swainson's hawk, white-tailed kite, and loggerhead shrike are state protected species and SJCOG covered species that could nest in trees or shrubs in the vicinity of the Port site. Should any of these species nest at the Port site prior to construction activities, they could be impacted by the proposed project. Direct and indirect impacts to these species would be similar to those described above for burrowing owl. Potential impacts to Swainson's hawk, white-tailed kite, and loggerhead shrike would be avoided or minimized with implementation of **MM-BIO-17**, **MM-BIO-18**, and **MM-BIO-19**.

While several mitigation measures would minimize impacts, project activities at the Port site could still result in direct or indirect impact if special-status wildlife species and their habitat are not sufficiently avoided and if these species occur in areas not avoided by project activities. This would be a **potentially significant** impact. However, with implementation of **MM-BIO-2** (Compensate for Mortality, Injury, or Disturbance and Loss of Habitat Function for Special-Status Wildlife), the impact would be reduced to **less than significant with mitigation.**

Once all proposed facilities at the Port site are constructed, operation and maintenance impacts would not be substantially different than existing conditions. As discussed in Chapter 3.1, Aesthetics, the proposed Port site consists of an undeveloped area in the northwest quarter of the Port of Stockton – West Complex. Approximately 75 facilities or businesses operate out of the West Complex as of 2020. While the project may require additional lights at the storage facility, these lights would not introduce substantial light compared to the project vicinity. As stated in Chapter 3.11, Noise, there would not be a significant increase in the outdoor ambient noise levels according to the City of Stockton standards. As such, any impacts to special-status wildlife species from additional activity or person(s) associated with maintenance and operation of the proposed Port site would be **less than significant**.

Impact BIO-2 The project may substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community.

Sustainable Forest Management Projects (Feedstock Acquisition)

In general, common and widespread plant and wildlife species (including fish species) would not be susceptible to population threats and community elimination. Special-status plant and wildlife species may be more susceptible

due to declining populations, vulnerability to habitat change, or restricted distributions. As previously stated, 200 special-status wildlife or fish species are known to occur or have a potential to occur in the Working Area. Those special-status species associated with forest, woodland, and shrubland communities are most vulnerable to impacts from feedstock acquisition in the Working Area because of their predominance on National Forest land and other timberlands.

Special-status species may be more or less susceptible to population threats or community elimination, depending on their life history strategy and distribution. For example, wildlife species that can occupy a wide variety of habitat types throughout the state (e.g., western bumblebee and American badger) or highly mobile species with large home ranges (e.g., Sierra Nevada red fox and gray wolf) would be less susceptible to population threats or community elimination as a result of feedstock acquisition activities. In addition, plant and wildlife species that occur in aquatic or riparian habitat would be generally less susceptible to population threats as their habitat would not be targeted by feedstock activities.

There is critical habitat designed for 30 federally listed plant (10) and wildlife (20) species in the Working Area (refer to Table 3.3-5). However critical habitat for 22 of these species is either located outside of forested land where feedstock activities would specifically occur (e.g., Central Valley) or is designated for species strongly tied to vernal pools that would not be treated, nor disturbed by feedstock acquisition. Critical habitat for the remaining 8 species could occur in or adjacent to forested land in the Working Area: California red-legged frog, Lost River sucker, Northern spotted owl, Oregon spotted frog, Shortnose sucker, Sierra Nevada yellow-legged frog, Webber's ivesia, and Yosemite toad. For any project that could result in adverse impacts to threatened or endangered species, the project proponent or federal lead agency must consult with the USFWS to ensure that any such action is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat for that species. Therefore, the proposed project would comply with the federal ESA such that no adverse modification to critical habitat would result from feedstock activities.

As discussed in Section 2.4, feedstock would come from three sources in the Working Area: (1) GSNR biomass only thinning projects, (2) harvest residuals, and (3) mill residuals from third-party commercial lumbermills. However, and as discussed in Section 3.3.4.1, there is only a potential for impacts to biological resources from two sources: GSNR biomass only thinning projects and third-party harvest residuals, both of which are discussed below.

GSNR Biomass Only Thinning Projects

Mechanical and manual treatment activities and potential temporary stream crossing installation during GSNR biomass thinning only projects would not involve the permanent removal of natural vegetation communities as would a land conversion or development project. Moreover, GSNR Biomass Only Thinning Projects would be subject to mandatory treatment prescription criteria (see Section 2.4) limiting the materials that may be removed during these activities, and regulating the conditions for removal. Treatment activities of this type would avoid major waterbodies and associated riparian vegetation by at least 75 feet, as set forth in Section 2.4. Temporary stream crossings would only be installed if necessary to facilitate access to a given treatment site; these structures would be designed to result with minimal habitat impacts in accordance with required resource permits (e.g., Lake or Streambed Alteration Agreement, Incidental Take Authorization/Biological Opinion). Further, habitat loss would be limited to forest and timberlands and temporary in nature, as well as a means to prevent catastrophic habitat loss from severe wildfires (megafires) that ignite from the suppression and buildup of forest fuels. The proposed project is intended to enhance forest resiliency to drought, reduce fire risk, restore natural watersheds, among other objectives (refer to Section 2.2, Project Objectives).

Third-Party Harvest Residuals

As discussed in Section 2.4, GSNR would procure residual biomass material resulting from third-party sustainable forest management projects in the Working Area. This activity would be subject to the applicable constraints set forth in Section 2.4, including limiting the materials that may be removed and regulating the conditions for removal. Access to harvest residuals, including slash piles and other vegetative debris (roundwood or chips), would primarily occur using existing forest roads and logging/haul trucks. This activity would be limited to discrete locations previously disturbed by treatment activities, and therefore involve less ground-disturbance than GSNR biomass only thinning projects. Further, this activity would not involve the permanent removal of natural vegetation communities, as well as avoid major waterbodies and riparian vegetation by at least 75 feet, as set forth in Section 2.4.

While ground disturbance associated with third-party harvest residuals would be minor and localized to previously treated sites, this activity may occur weeks to months following treatment at a given site, allowing sufficient time for special-status wildlife, as well as common prey species (e.g., invertebrates, amphibians, reptiles, and rodents), to inhabit slash piles and other vegetative debris targeted for removal. The likelihood of wildlife occupying a slash pile or similar (harvest residuals) along a roadside may be lower than residuals located further away, and seasonality would influence the critical activity (e.g., nesting, overwintering, foraging) or resource impacted (e.g., shelter, prey) for a given species. As such, there is a potential for plant and wildlife populations to be impacted by this activity due to the extent of land in the Working Area subject to harvest residual collection and associated habitat disturbance/loss.

Conclusion

Several PDFs are included as part of the proposed project to avoid or minimize impacts to special-status species individuals, communities, and their habitat in the Working Area during GSNR biomass thinning only projects (including potential stream crossings) and third-party harvest residuals. PDF-BIO-1 requires a reconnaissance-level survey of the proposed work area for biomass only thinning projects to determine whether there is potential for special-status species to occur on site. Moreover, PDF-BIO-7 requires focused or protocol-level surveys to identify special-status wildlife species prior to work start for such projects so that they can be avoided by implementing additional measures (e.g., avoidance of occupied habitat and limited operating periods). PDF-BIO-2 requires mandatory training for all field personnel regarding biological resources to increase awareness of special-status species potentially in the work area and measures to avoid or minimize impacts. Hazardous materials used during construction would be transported, used, and disposed of in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. The proposed project would also implement a SWPPP or equivalent document (PDF-GEO-3 and PDF-GEO-4) during biomass only thinning project treatment activities that would include steps to prevent, contain, and clean up hazardous material spills that could result from construction. PDF-GEO-1, PDF-GEO-2, PDF-GEO-5 and PDF-GEO-6 require implementation of measures to minimize soil erosion, which would reduce potential indirect impacts on special-status plants from soil destabilization and dusting. In addition, PDF-BIO-05 requires a protocol-level rare plant survey prior to treatment activities and PDF-BIO-6 requires avoidance of special-status plant species if and where present in the work area. PDF-BIO-04 requires implementation of actions to prevent the spread of invasive plants and noxious weeds that could compete with special-status plants for water, light, and nutrients, which would reduce potential indirect impacts from competition with invasive species. PDF-BIO-9 and PDF-BIO-10 would as applicable reduce the likelihood of impacts to special-status plant and wildlife species by minimizing the direct disturbance and loss of species habitat and functionality.

While PDFs would minimize impacts, the above feedstock activities in the Working Area could still result in direct or indirect impacts if these species and their habitat are not sufficiently avoided after identification and if these

species occur in areas not avoided by feedstock activities. This would be a **potentially significant** impact. However, with implementation of **MM-BIO-1** (Compensate for Unavoidable Loss of Special-Status Plants) and **MM-BIO-2** (Compensate for Mortality, Injury, or Disturbance and Loss of Habitat Function for Special-Status Wildlife), potential impacts to existing fish or wildlife populations and/or plant or animal communities would be reduced to less than significant with mitigation.

Proposed feedstock activities in the Working Area would not include construction or operation of permanent structures or infrastructure. As a result, no long-term operation-related impacts would occur.

Wood Pellet Production

Lassen Facility

In general, common and widespread plant and wildlife species (including fish species) would not be susceptible to population threats and community elimination. Special-status plant and wildlife species may be more susceptible due to declining populations, vulnerability to habitat change, or restricted distributions. As previously stated, special-status plant and wildlife species were determined to have a low potential to occur or are not expected to occur due to the lack of suitable habitat or the presence of very low quality habitat within or adjacent to the site, the lack of documented occurrences near the site, or due to the site being outside of the species' known geographic or elevation range. As such, project construction and operational would not substantially reduce habitat, cause a species population to drop below self-sustaining levels, or threaten to eliminate a wildlife or plant community altogether, and the impact would be **less than significant.** No mitigation is required.

Tuolumne Facility

In general, common and widespread plant and wildlife species (including fish species) would be less susceptible to population threats and community elimination. Special-status plant and wildlife species may be more susceptible due to declining populations, vulnerability to habitat change, or restricted distributions. As previously stated, seven special-status plant species (Beaked clarkia, Tuolumne button-celery, spiny-sepaled button-celery, Stanislaus monkeyflower, forked hare-leaf, veiny monardella, and Patterson's navarretia) and seven special-status wildlife species (California tiger salamander, California red-legged frog, northwestern pond turtle, tricolored blackbird, Townsend's big-eared bat, pallid bat, and western red bat) have potential to occur on the Tuolumne facility site. All of these species are known to occur in other locations outside of the Tuolumne facility site region (CDFW 2024a).

Several mitigation measures are included as part of the proposed project to avoid or minimize potential impacts to special-status species individuals, communities, and their habitat at the Tuolumne facility site. As discussed in Section 3.6, the project would adhere to the required measures stipulated by a site-specific SWPPP to minimize soil erosion, which would reduce potential indirect impacts associated with construction and operations on special-status plants from soil destabilization and dusting. In addition, **MM-BIO-9** requires a protocol-level rare plant survey prior to construction and avoidance of special-status plant species if and where present in the work area wherever feasible. **MM-BIO-16** requires implementation of actions to prevent the spread of invasive plants and noxious weeds that could compete with special-status plants for water, light, and nutrients, which would reduce potential indirect impacts from competition with invasive species. Potential impacts to special-status wildlife and native and migratory nesting birds or their habitat would be avoided or minimized with implementation of **MM-BIO-8** through **MM-BIO-16**.

Given the incorporation of the above forementioned mitigation measures and the general lack of self-sustaining plant and animal communities currently occurring in the work area, construction and operation of the Tuolumne

Facility site would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community. As such, potential impacts with respect to existing fish or wildlife populations and/or plant or animal communities would be **less than significant.** No mitigation is required.

Transport to Market

Port of Stockton

In general, common and widespread plant and wildlife species (including fish species) would not be susceptible to population threats and community elimination. Special-status plant and wildlife species may be more susceptible due to declining populations, vulnerability to habitat change, or restricted distributions. As previously stated, no special-status plant species are expected to occur at the Port site due to the lack of suitable habitat or the presence of very low quality habitat within or adjacent to the site, the lack of documented occurrences near the site, and/or the site being outside of the species' known geographic or elevation range. There are eight special-status wildlife species (green sturgeon - southern DPS, burrowing owl, Swainson's hawk, white-tailed kite, Delta smelt, loggerhead shrike, steelhead – Central Valley DPS, and chinook salmon - Central Valley fall/late fall-run ESU) known to occur or have a potential to occur at the Port site. Of these eight species, no impacts to the four aquatic species are anticipated, leaving potential impacts to four special-status wildlife species (burrowing owl, Swainson's hawk, white-tailed kite, and loggerhead shrike). All of these four species are known to occur in other locations outside of the region of the Port site (CDFW 2024a).

As previously discussed, the Port site is largely in a disturbed condition from previous grading and regular vegetation management, as well as some existing development. Approximately 90% of the site is mapped as disturbed or urban, and the remaining 10% consists of a degraded seasonal wetland and riparian vegetation. As such, there is a general lack of suitable habitat for many common and special-status species known to occur in the region. In addition, the Port site is essentially surrounded by urban development which further limits the ability of wildlife populations to become established and to be self-sustaining. Native plant and vegetation communities on the site are essentially non-existent. The two patches of riparian vegetation are dominated by non-native and invasive species.

Given the highly disturbed nature of the Port site, its isolation from other areas of undisturbed habitat in the vicinity, and the general lack of self-sustaining plant and animal communities currently occurring at the Port site, construction and operation of the Port site would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community. As such, potential impacts with respect to existing fish or wildlife populations and/or plant or animal communities would be **less than significant.** No mitigation is required.

Impact BIO-3 The project may have a substantial adverse effect on riparian habitat or other sensitive natural community.

Sustainable Forest Management Projects (Feedstock Acquisition)

As discussed in Section 3.3.1.1, sensitive natural communities may be of special importance to federal and state agencies and local conservation organizations for a variety of reasons, including their rarity or regionally declining status, or because they provide important habitat to common and special-status plant and wildlife species. Within California, the CNDDB reported 147 sensitive natural communities within 5 miles of the Working Area (refer to

Table 4 in Appendix C1), and undocumented occurrences may occur within treatment sites or other work areas. Of these 147 sensitive natural communities, 40 natural communities are associated with upland forest, woodland, or shrubland communities. Within southern Oregon, the OCS has designated nine strategy habitats determined to be of greatest conservation concern in the Working Area: aspen woodland, flowing water and riparian habitat, grasslands, late successional mixed conifer forests, natural lakes, oak woodlands, Ponderosa pine woodlands, sagebrush habitats, and wetlands (ODFW 2024b). Of these nine habitats, four strategy habitats are associated with upland forest, woodland, or shrubland communities (late successional mixed conifer forests, oak woodlands, Ponderosa pine woodlands, sagebrush). Within western Nevada, NatureServe (2024) has designated numerous areas of unprotected biodiversity importance (AUBIs) in the Working Area.

Forest, woodland, and shrubland communities that are also considered sensitive natural communities as described above and in Section 3.3.1.1, are most vulnerable to impacts from feedstock activities in the Working Area because of their predominance on National Forest land and other timberlands where treatments would occur.

GSNR Biomass Only Thinning Projects

Treatment activities of this type would involve vegetation removal that could directly impact sensitive natural communities potentially occurring in work areas. Mechanical and manual treatment activities, road construction, and stream crossing installation and use could result in loss or degradation of sensitive natural communities through the direct removal of dominant and characteristic vegetation that defines the community or modifications to species composition, growth form, and vegetation structure that causes a transition to a more common community or one dominated by non-native vegetation.

GSNR biomass only thinning projects could also indirectly impact sensitive natural communities. An indirect impact would occur if activities altered habitat or site conditions in a manner that later results in the death or lack of regeneration of vegetation that typifies the sensitive community at the alliance level. Additional ground disturbance resulting from these activities could create new barren substrates into which invasive plant species could expand and degrade adjacent sensitive natural communities. If not properly sanitized, equipment could spread plant pathogens among work areas, causing death of native vegetation that typifies sensitive communities.

Third-Party Harvest Residuals

Access to harvest residuals, including slash piles and other vegetative debris (roundwood or chips), would primarily occur using existing forest roads and logging/haul trucks. This activity would be limited to discrete locations previously disturbed by treatment activities, and therefore involve less ground-disturbance than GSNR biomass only thinning projects. Further, this activity would avoid major waterbodies and riparian vegetation by at least 75 feet, as set forth in Section 2.4. Direct impacts to sensitive natural communities could include loss or degradation through the direct removal of dominant and characteristic vegetation or modifications to species composition, growth form, and vegetation structure. Indirect impacts could include the spread of invasive species and plant pathogens, leading to the degradation of sensitive communities. These direct and indirect impacts would generally be similar, but typically lesser in extent and intensity than in the case of biomass only thinning projects. See above for additional information regarding these impacts.

Conclusion

Several PDFs would avoid or minimize impacts on sensitive natural communities. PDF-BIO-1 and PDF-BIO-12 would minimize direct impacts to sensitive natural communities by requiring the identification and mapping of such

communities and the establishment of avoidance buffers to be marked prior to and through the duration of biomass only thinning project treatment activities. Riparian vegetation would be avoided by at least 75 feet as stated in Section 2.4 of Chapter 2, Project Description. PDF-BIO-3 would avoid infection of sensitive communities by implementing best management practices to prevent the spread of plant pathogens into sensitive communities from construction equipment and soil. PDF-BIO-4 would avoid degradation of sensitive communities by non-native invasive plants by implementing measures to prevent the spread of such plants at treatment sites.

While PDFs would minimize impacts, the above feedstock activities could still reduce the acreage of some communities, eliminate communities from a work area, or reduce existing habitat values and functions provided by such communities (e.g., soil stabilization provided by native bunchgrasses). This would be a **potentially significant** impact. However, with implementation of **MM-BIO-3**, Compensate for Unavoidable Loss of Sensitive Natural Communities and Oak Woodlands, the impact would be reduced to less than significant with mitigation.

Proposed feedstock activities in the Working Area would not include construction or operation of permanent structures or infrastructure. As a result, no operation-related impacts would occur.

Wood Pellet Production

Lassen Facility

The development footprint for the Lassen Facility site contains approximately 57 acres of Great Basin grassland, which is considered a sensitive natural community by CDFW. An additional 165 acres of this sensitive natural community occurs throughout the greater site boundary (as shown on Figure 3.3-3) and is co-dominated ashy ryegrass, bald brome, and nineleaf biscuitroot. Trees are absent and shrubs are limited to sparse big sagebrush individuals.

Construction of the wood pellet processing facility and associated infrastructure would result in the direct removal of approximately 26% of the Great Basin grassland on the four parcels encompassing the proposed site. Construction and operational activities could also indirectly impact additional Great Basin grassland located outside but adjacent to the project site. Potential indirect impacts include increased cover of nonnative invasive plants and reduced survival of native vegetation from construction- and operational-related dust or competition with nonnative invasive plants. Additional disturbance associated with construction would create new barren substrates into which such species could expand. Dust generated from construction- and operational-related traffic or ground disturbance could settle on the leaves of native plants growing near access roads or adjacent to work areas, adversely affecting photosynthesis, respiration, and transpiration.

Within the project site footprint, this community is highly disturbed as a result of previous grading and stockpiling activities. Impacts to Great Basin grassland would be significant if loss of this community on the site substantially reduced its spatial extent in the region. Great Basin grassland on the site contains sparse cover of big sagebrush within the site, but is coarsely mapped by FRAP (2015) and USDA (2023) as sagebrush or Basin sagebrush. Moreover, Great Basin grassland often occurs in a fine mosaic with big sagebrush (Young et al. 2007). Based on FRAP (2015) and USDA (2023) mapping, an estimated 25 to 40 acres of other habitat, alliance, and community groupings of Big Basin grassland (i.e., perennial grassland and perennial grasses and forbs) and 15,990 to 17,500 acres of sagebrush or Basin sagebrush (which often contains Great Basin grassland) are mapped within 5 miles of the site footprint. Based on a review of aerial photography (Google Earth Pro 2023), Great Basin grassland mapped on the site has a very similar or identical vegetative signature of the sagebrush communities mapped extensively in the region by FRAP (2015) and USDA (2023). Although there is existing Great Basin grassland throughout the

region, the loss of 57 acres on the Lassen Facility site would be a **potentially significant** impact. However, with implementation of **MM-BIO-3** (Compensate for Unavoidable Loss of Sensitive Natural Communities and Oak Woodlands), the impact would be reduced to less than significant with mitigation.

Once constructed, operations and maintenance at the Lassen Facility site would be limited to already disturbed areas. Therefore, there would be **no impact** to sensitive natural communities from operations and maintenance activities. No mitigation is required.

Tuolumne Facility

The Tuolumne Facility site contains 0.7 acres of spikerush marsh and 0.25 acres of riparian woodland, both of which are considered sensitive natural communities by CDFW. Both communities occur adjacent to the perennial pond in the northeastern corner of the site, with spikerush marsh occurring as a component of the freshwater emergent wetland at the pond's eastern edge and riparian woodland growing on the western and southern banks. These sensitive natural communities would be avoided by the project. As such, impacts to sensitive natural communities at the Tuolumne Facility site are not anticipated; as such, there would be **no impact**. No mitigation is required.

Transport to Market

Port of Stockton

Within the site, there is approximately 1.39 acres of riparian vegetation growing along a constructed ditch. This vegetation community occurs in two small patches and is dominated by invasive Himalayan blackberry. There is a continuous riparian woodland growing along the Stockton Deep Water Channel near the Port site. Given the very small quantity and disturbed nature of the riparian vegetation on site and the availability of existing riparian habitat proximate to the site, project construction and operational impacts to this community are considered **less than significant**.

Impact BIO-4 The project may have a substantial adverse effect on federally or state-protected wetlands.

Sustainable Forest Management Projects (Feedstock Acquisition)

As discussed above, the Working Area intersects tens of thousands of linear miles of streams, rivers, canals, and ditches, as well as freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, lake, and riverine habitat. State and federally protected wetlands and other aquatic resources in the Working Area and considered in this analysis are mapped at a statewide level (USGS 2024e; USGS 2024a; USFWS 2024a). However, many aquatic resources are defined at a finer scale than is available in by public datasets used in this analysis.

GSNR Biomass Only Thinning Projects

GSNR Biomass Only Thinning Projects (treatment activities) would avoid most aquatic resources in the Working Area, including riparian areas, lakes, and perennial streams, by at least 75 feet, as set forth in Section 2.4. However, access to remote treatment areas may require installing a temporary stream crossing, which have the potential to impact state and federally protected wetlands and other aquatic resources. Temporary crossings would only be installed if necessary and would be designed and implemented to result with minimal aquatic resource impacts in accordance with the required resource permits (e.g., Lake or Streambed Alteration Agreement, Waste Discharge Requirements or Section 401 and 404 Clean Water Act permits, Incidental Take Authorization/Biological Opinion).

In addition, mechanical and manual treatment activities during GSNR biomass only thinning projects could impact smaller aquatic resources in or near the work area. Thus, treatment activities of this type have the potential to unintentionally impact protected aquatic resources, leading to the degradation of ecological functions and inherent value. This impact could result from ground-disturbance, removing upland vegetation that affects hydrology, directly clearing wetland vegetation, and filling or dredging within aquatic resources.

Third-Party Harvest Residuals

Collecting harvest residuals would involve minor ground disturbance in previously disturbed treatment areas at least 75 feet from aquatic habitat, as set forth in Section 2.4. Thus, there would be no direct impacts to state and federally protected wetlands and other aquatic resources from this activity. Indirect impacts could include accidental spills of fuel or other hazardous materials, but these impacts are unlikely to occur due to harvest residuals being collected in previously disturbed treatment areas at least 75 feet from aquatic habitat.

Conclusion

GSNR biomass only thinning projects and third-party harvest residuals could have direct and indirect impacts on state and federally protected wetlands and other aquatic resources. However, several PDFs would avoid or minimize such impacts. As discussed in Section 3.9, hazardous materials used during construction would be transported, used, and disposed of in accordance with all relevant federal, state, and local laws. The proposed project would also implement a Stormwater Pollution Prevention Plan (SWPPP) or equivalent document (PDF-GEO-3 and PDF-GEO-4) during biomass only thinning project treatment activities that would include steps to prevent, contain, and clean up hazardous material spills that could result from treatment activities. PDF-GEO-1, PDF-GEO-2, PDF-GEO-5, and PDF-GEO-6 as applicable require implementation of measures to minimize soil erosion, which would reduce potential indirect impacts from soil transport to waterbodies. PDF-BIO-2 requires mandatory training for all field personnel regarding biological resources, including aquatic resources, to increase awareness of these resources in or near the work area and measures to avoid or minimize impacts. Lastly, PDF-BIO-13 requires that the contractor install no-disturbance buffers around each delineated aquatic resource using high-visibility flagging, fencing, stakes, or similar that would be inspected and maintained through the duration of activities at a given work site.

While PDFs would minimize impacts, the above feedstock activities could still result in impacts to state and federally protected wetlands and other aquatic resources if these resources are not sufficiently avoided after identification and if these resources occur in areas that are not avoided by feedstock activities. This would be a **potentially significant** impact. However, with implementation of **MM-BIO-4** (Compensate for Unavoidable Loss of Wetlands and Other Aquatic Resources), the impact would be reduced to less than significant with mitigation.

Proposed feedstock activities in the Working Area would not include construction or operation of permanent structures or infrastructure. As a result, no operation-related impacts would occur.

Wood Pellet Production

Lassen Facility

The Lassen Facility site contains approximately 42.8 acres of potentially jurisdictional aquatic resources, including 2.1 acres of non-wetland waters and 40.7 acres of wetlands. Wetlands are composed of eight seasonal wetlands and three seasonal wetland swales. Non-wetland waters are composed of six constructed drainage ditches.

Construction of the wood pellet processing facility and associated infrastructure would directly remove of 39.9 acres of aquatic resources on the Lassen Facility site. Within the site footprint, wetlands are highly disturbed because of previous grading and stockpiling activities. Impacts to these wetlands would be significant if the loss would substantially reduce the extent of wetlands in the region. Further, there are approximately 1,326 acres of wet meadows mapped within 5 miles of the site boundary (FRAP 2015). Thus, the loss of 39.9 acres of wetlands on the Lassen Facility site is relatively small when compared to the extent of wetlands in the region.

Construction activities could also indirectly impact avoided aquatic resources. Indirect impacts include accidental spills of fuel or other hazardous materials and ground disturbance resulting in the introduction of invasive plant species and dust generation. Dust produced by ground disturbance could settle on the leaves of nearby wetland plants, adversely affecting plant survival. Construction equipment and materials could also introduce invasive plant species if not properly cleaned prior to arriving on site. In addition, changes in site topography from construction grading could alter site hydrology and surface run-off, resulting with habitat degradation or loss of wetland function over time. Together, these impacts could disrupt wetland ecosystems in ways that reduce the extent and survival of the wetland over time.

As discussed in Section 3.9, hazardous materials used during construction would be transported, used, and disposed of in accordance with all relevant federal, state, and local laws. The proposed project would also implement a Stormwater Pollution Prevention Plan (SWPPP) during construction activities that would include BMPs to control erosion and sedimentation, which would reduce potential indirect impacts from soil transport to waterbodies. In addition, **MM-BIO-5** requires mandatory training for all field personnel regarding biological resources, including aquatic resources, to increase awareness of these resources near the work area and measures to avoid or minimize impacts.

While mitigation measures would minimize impacts to avoided wetlands, the direct removal of 39.9 acres of aquatic resources on the site would permanently remove the existing habitat and functions these features provide. This would be a **potentially significant** impact. However, **MM-BIO-7** requires compensatory mitigation to ensure no net loss of wetlands or other aquatic resources. Based on site soil, hydrology, and watershed characteristics, the southern portion of the Lassen Facility site could be used as on-site wetland mitigation. This portion of the site has the potential to support approximately 47.8 acres of seasonal wetland (WRA 2024b). Therefore, with implementation of **MM-BIO-7**, the impact would be reduced to less than significant with mitigation.

Once constructed, operations at the Lassen Facility site would be restricted to disturbed or developed areas outside of aquatic resources. Feedstock material stockpiling at the Lassen Facility site would be restricted from areas where material could wash into nearby aquatic resources. In general, operations would be implemented such that there would be **no impact** to nearby aquatic resources.

Tuolumne Facility

The Tuolumne Facility site contains approximately 10.5 acres of potentially jurisdictional aquatic resources, including 7.6 acres of non-wetland waters, 1.9 acres of wetlands, and 1 acre of riparian woodland (CDFW jurisdiction only). Wetlands are composed of two freshwater emergent wetlands, five seasonal wetlands, and a small vernal pool. Non-wetland waters are composed of five natural drainages, three constructed drainage ditches, a perennial pond, and four detention basins.

The proposed project would directly remove approximately 2.5 acres of aquatic resources at the Tuolumne Facility site. Within the site footprint, wetlands and other aquatic resources are highly disturbed because of past and

ongoing mill operation activities. Impacts to these resources would be significant if the loss would substantially reduce the extent of wetlands in the region. Further, there are approximately 970 acres of similar aquatic resources mapped within 5 miles of the site boundary (freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, and riverine) (USFWS 2024a). Thus, the loss of 2.5 acres of aquatic resources at the Lassen Facility site is relatively small when compared to the extent of wetlands in the region.

Construction activities could also indirectly impact avoided aquatic resources. Indirect impacts include accidental spills of fuel or other hazardous materials and ground disturbance resulting in the introduction of invasive plant species and dust generation. Dust produced by ground disturbance could settle on the leaves of nearby wetland plants, adversely affecting plant survival. Construction equipment and materials could also introduce invasive plant species if not properly cleaned prior to arriving on site. In addition, changes in site topography from construction grading could alter site hydrology and surface run-off, resulting with habitat degradation or loss of wetland function over time. Together, these impacts could disrupt wetland ecosystems in ways that reduce the extent and survival of the wetland over time.

As discussed in Section 3.9, hazardous materials used during construction would be transported, used, and disposed of in accordance with all relevant federal, state, and local laws. The proposed project would also implement a Stormwater Pollution Prevention Plan (SWPPP) during construction activities that would include BMPs to control erosion and sedimentation, which would reduce potential indirect impacts from soil transport to waterbodies. In addition, **MM-BIO-8** requires mandatory training for all field personnel regarding biological resources, including aquatic resources, to increase awareness of these resources near the work area and measures to avoid or minimize impacts.

While mitigation measures would minimize impacts to avoided wetlands, the direct removal or degradation of 2.5 acres of aquatic resources on the site would permanently remove the existing habitat and functions these features provide. This would be a **potentially significant** impact. However, with implementation of **MM-BIO-4** (Compensate for Unavoidable Loss of Wetlands and Other Aquatic Resources), the impact would be reduced to less than significant with mitigation.

Once constructed, operations at the Tuolumne Facility site would be restricted to disturbed or developed areas outside of aquatic resources. Feedstock material stockpiling at the Tuolumne Facility site would be restricted from areas where material could wash into nearby aquatic resources. In general, operations would be implemented such that there would be **no impact** to nearby aquatic resources.

Transport to Market

Port of Stockton

The Stockton Deepwater Channel (San Joaquin River) is located adjacent to the Port site. The proposed project does not involve any construction or improvements to existing facilities within or over the San Joaquin River. Two large domes would be constructed at the Port site for storing and transporting pellets to a shiploader. The domes would feed pellets to the shiploader via a gravity conveyor, and the shiploader would transfer the pellets to cargo ships for export. Pellet transport to cargo ships would take place in a sealed/contained system with no potential for pellets to enter nearby waterbodies. There would be no direct or indirect impacts to the San Joaquin River resulting from pellet storage, transport, and export.

Within the Port site, there are three ditches, one seasonal wetland, and two patches of riparian woodland (CDFW jurisdiction only). In general, these resources are constructed stormwater features, altered by the surrounding landscape, and/or mowed regularly. Construction at the Port site may result in the direct removal or fill of these resources during ground disturbance, resulting in the loss of wetland habitat and function. Construction activities could also indirectly impact these resources.

As discussed in Section 3.9, hazardous materials used during construction would be transported, used, and disposed of in accordance with all relevant federal, state, and local laws. The proposed project would also implement a Stormwater Pollution Prevention Plan (SWPPP) during construction activities that would include BMPs to control erosion and sedimentation, which would reduce potential indirect impacts from soil transport to waterbodies. In addition, **MM-BIO-17** requires mandatory training for all field personnel regarding biological resources, including aquatic resources, to increase awareness of these resources in or near the work area and measures to avoid or minimize impacts.

While mitigation measures would minimize impacts to avoided wetlands, the direct removal or degradation of aquatic resources on the site would permanently remove the existing habitat and functions these features provide. This would be a **potentially significant** impact. However, with implementation of **MM-BIO-4** (Compensate for Unavoidable Loss of Wetlands and Other Aquatic Resources), the impact would be reduced to less than significant with mitigation.

Once constructed, operations at the Port site would be restricted to developed areas. There would be **no impact** to the San Joaquin River or other aquatic resources resulting from pellet storage, transport, and export.

Impact BIO-5 The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Sustainable Forest Management Projects (Feedstock Acquisition)

Movement corridors in the Working Area are used by a variety of wildlife including small mammals, larger predators such as bobcat, mountain lion, and wolves, ungulates such as deer, big-horn sheep, and elk, and birds. There are 70 designated movement corridors partially located with forested land where feedstock activities could occur. Refer to Figure 3.3-8, Working Area - Wildlife Connectivity, for a visual depiction of these corridors in the Working Area.

As discussed in Section 2.4, feedstock for manufacturing of wood pellets would come from three sources in the Working Area: (1) GSNR biomass only thinning projects, (2) harvest residuals, and (3) mill residuals from third-party commercial lumbermills. However, and as discussed in Section 3.3.4.1, there is only potential impacts to biological resources, such as wildlife movement corridors, from two sources: GSNR biomass only thinning projects and harvest residuals, both of which are discussed below.

GSNR Biomass Only Thinning Projects

Wildlife Movement

GSNR biomass only thinning projects would range in location and size (10 to 2,000 acres) such that each work site would vary in its potential to support wildlife movement. Treatment sites located closer to human habitation would typically provide habitat for wildlife species that are more tolerate of disturbance. Whereas large treatment sites in

remote areas may support movements of wildlife species that are sensitive to disturbance. In addition, wildlife species with extensive home ranges (e.g., wolves, elk, and big-horn sheep) would be less susceptible to impact compared to species with much smaller home ranges (e.g., small mammals, invertebrates, and amphibians).

GSNR biomass only thinning projects would range in size and duration (weeks to months), depending on the location and type of treatment. In general, GSNR biomass only thinning projects, including stream crossing construction and use, would be localized and temporary and would not involve permanent fence or any major barrier that could impede wildlife movement. Treatment sites containing historic migratory corridors or other important movement routes would likely not encompass the entire area available for movement, thereby allowing migratory or mobile species to use the surrounding forested land to avoid treatment activities. Migratory nocturnal wildlife would be less susceptible to impacts as treatment activities would not create any temporary barriers outside of working hours. Although a given work site may function as local dispersal habitat for wildlife movement, treatment activities would not create a significant impediment to wildlife movement.

GSNR biomass only thinning projects could include up to 1 mile of standard low standard (unpaved) road (per year, per project) and temporary stream crossings to facilitate access to remote sites. New roads and stream crossings would only be operational and maintained through the duration of treatment activities. Stream crossings would be designed to not impede fish or other aquatic species passage. In addition, each crossing would be removed, and the site restored in accordance with the required permits (e.g., Streambed Alteration Agreement from CDFW, Biological Opinion/Incidental Take Permit). New road construction and crossing installation would be temporary and localized (less than 1-mile-long disturbance area). Further, these roads and crossings would not create a significant impediment to wildlife movement.

Wildlife Nursery Sites

Nursery sites are locations where fish and wildlife congregate for hatching and/or raising young, such as bird nests, colonial waterbird (e.g., herons and egrets) rookeries, spawning areas for fish, fawning areas for deer, and bat maternity roosts. For the purposes of this EIR, nursery sites are considered for native wildlife that are not designated as special-status species, which are addressed separately. However, potential impacts to native wildlife nursery sites would be similar to those described above for special-status wildlife. Direct impacts include loss of a nursery site or associated individuals if not properly avoided by the project. Indirect impacts include sensory disturbance (i.e., noise, vibration, and visual) and loss or modification of species habitat.

Third-Party Harvest Residuals

Wildlife Movement

Collection of harvest residuals from third-party treatment areas would not interfere substantially with the movement of native fish or wildlife, or with established wildlife corridors because the area would already be disturbed. This activity would typically involve a small crew supporting removal of previously felled material at each acquisition site. Although the crew size and location will vary widely depending on the intensity of the specific project across the Working Area, crews (or “sides” at any given location would not normally exceed six workers). In addition, access to harvest residuals would primarily occur using existing logging/haul roads and avoid aquatic habitat by least 75 feet, as set forth in Section 2.4. As such, this activity would not create a significant impediment to wildlife movement.

Wildlife Nursery Sites

While ground disturbance associated with third-party harvest residuals would be minor and localized to previously treated sites, this activity may occur weeks to months following treatment at a given site, allowing sufficient time for wildlife to establish a nest, roost, or similar in slash piles and other vegetative debris targeted for removal. Potential impacts to native wildlife nursery sites would be similar to those described above for special-status wildlife. Direct impacts include loss of a nursery site or associated individuals if not properly avoided by the project. Indirect impacts include sensory disturbance (i.e., noise, vibration, and visual) and loss or modification of species habitat.

Conclusion

While GSNR biomass only thinning projects and third-party harvest residuals would not create a significant impediment to wildlife movement, these feedstock activities could have direct or indirect impacts on wildlife nursery sites. However, several PDFs would avoid or minimize such impacts. PDF-BIO-2 requires mandatory training for all field personnel regarding biological resources to increase awareness of wildlife potentially nesting or roosting in the work area and measures to avoid or minimize impacts. PDF-BIO-7 requires focused surveys for bat maternity roosts and other protected wildlife resources (if suitable habitat is found in the treatment area per PDF-BIO-1) prior to work start for biomass only thinning projects so that they can be avoided by implementing additional measures (e.g., pre-activity surveys, avoidance of occupied roosts and limited operating periods). In addition, active bird nests would be protected from noise or visual impacts through the implementation of PDF-BIO-8, which involves pre-treatment surveys for active bird nests prior to commencement of biomass only thinning project work, the establishment of no-disturbance buffers until the nest has fledged or is deemed inactive, and/or monitoring by a biological monitor to ensure that treatment-related noise is not disturbing an active nest.

Potential impacts to wildlife nursery sites and wildlife movement from the above feedstock activities would be avoided and minimized through implementation of PDFs. As such, any impact to wildlife nursery sites or movement would be **less than significant.** No mitigation is required.

Wood Pellet Production

Lassen Facility

Wildlife Movement

The southern half of the Lassen Facility site is within the outside edge of the Beaver Creek Rim/Indian Mountain – Little Hot Spring Valley essential connectivity area, as defined by the California Essential Habitat Connectivity (CEHC) project (Spencer et al. 2010). This site was formerly part of a wood processing sawmill. The buildings from the prior use are located north of the site. The BNSF Railroad forms the eastern boundary of the site. An agricultural chemical company (Helena Agri-Business) and two residences are located west of the site. Agricultural land is located to the east and south. Most of the lands adjacent to the site are under Williamson Act contracts.

Development of the facilities at the Lassen Facility site would not interfere substantially with the movement of native wildlife in the southern portion of the site. The proposed facility is sited in an undeveloped area generally nestled between existing development and would not impede movement through the area. There is extensive open space in the southern portion of the site where no development would occur. Additionally, once constructed, ample undeveloped land will remain in the region capable of supporting wildlife movements, including the Pit River corridor to the east and the rest of the Beaver Creek Rim/Indian Mountain – Little Hot Spring Valley essential connectivity

area to the south. Thus, project construction and operations at the Lassen Facility would not substantially interfere with the movement of native fish or wildlife, or with established wildlife corridors and there would be **no impact**. No mitigation is required.

Wildlife Nursery Sites

The Lassen Facility site contains vegetation, barren areas, and structures that may support nursery sites for common native birds. Grassland and barren areas provide nesting habitat for common native and migratory ground-nesting/breeding birds such as western meadowlark (*Sturnella neglecta*) and killdeer (*Charadrius vociferus*), and buildings adjacent to the site provide nesting habitat for birds such as mourning dove (*Zenaida macroura*), European starling (*Sturnus vulgaris*), and rock pigeon (*Columba livia*). As discussed in Section 3.3.2, native and migratory nesting birds are protected by the Migratory Bird Treaty Act (MTBA) and California Fish and Game Code.

If conducted during the nesting season (February 1 to August 31), construction activities could impact nesting birds. Ground disturbance, vegetation removal, and structure modification or demolition associated with construction of the wood pellet processing facility could directly impact nesting birds by crushing eggs or killing nestlings in active nests. Indirect impacts would occur if increased human activity and construction-generated noise and vibration near active nests caused adults to abandon eggs or recently hatched young. This could be a **potentially significant** impact. However, implementation of **MM-BIO-6** would avoid these impacts by scheduling construction work outside the nesting season or conducting pre-activity nesting bird surveys and avoiding active nests. Therefore, these project activities would not substantially impede the use of bird nursery sites; as such, potential impacts would be reduced to less than significant with mitigation.

Once constructed, facility operations would likely preclude many wildlife species from commencing nesting or roosting on site due to regular human disturbance. Further, it is assumed that any wildlife establishing a nursery site on site would already exhibit some tolerance to disturbances from ongoing operations and maintenance As such, potential impacts associated with facility operation would be **less than significant.** No mitigation is required.

Tuolumne Facility

Wildlife Movement

The Tuolumne Facility site is not within an essential connectivity area, natural landscape block, or natural area, as defined by the CEHC project (Spencer et al. 2010). This site is partially developed with existing structures and other features generally concentrated within the center of the site. The Red Hills Recreation Management Area located approximately 0.60 miles east of the site is designated as a natural Landscape Block connecting the unique soils and habitats of the region to the aquatic habitat of the Don Pedro Reservoir to the south. The riparian and wetland habitat and associated wetland and seasonal drainage at the northern portion of the Tuolumne Facility site provide a movement corridor and safe undercrossing of La Grange Road for local wildlife such as deer, racoon, skunk, opossum, fox, coyote, and mountain lion.

Development of the facilities at the Tuolumne Facility site would not interfere substantially with the movement of native wildlife along the northern boundary of the site. The proposed site plan avoids 100% of the riparian corridor and would not impede movement through the area. Further, once constructed, ample undeveloped land will remain in the region capable of supporting wildlife movements, including the Red Hills Recreation Management Area corridor to the east. Thus, project construction and operation of the Tuolumne Facility would not substantially

interfere with the movement of native fish or wildlife, or with established wildlife corridors and there would be **no impact**. No mitigation is required.

Wildlife Nursery Sites

The Tuolumne Facility site contains vegetation, barren areas, and structures that may support nursery sites for common native birds and bats. Grassland and barren areas provide nesting habitat for ground-nesting birds such as western meadowlark and killdeer, and the abandoned buildings provide nesting habitat for birds such as barn owl (*Tyto alba*), black phoebe (*Sayornis nigricans*), and barn swallow (*Hirundo rustica*). Mature cottonwood trees (or other trees with exfoliating bark, crevices, and/or sufficient foliage) in the riparian woodland adjacent to the pond and the abandoned buildings provide roosting habitat for common bats such as Brazilian free-tailed bat (*Tadarida brasiliensis*), big brown bat (*Eptesicus fuscus*), and California myotis (*Myotis californicus*). No evidence of bat maternity roosts was observed during the May 2021 bat roost assessment (Table 3.3-9) but bats could form maternity roosts in the future. As discussed in Section 3.3.2, native and migratory nesting birds are protected by the MBTA and CFGC and native bats are protected by CFGC.

If conducted during the nesting season (February 1 to August 31), construction activities could impact nesting birds. Ground disturbance, vegetation removal, and structure modification or demolition associated with construction of the wood pellet processing facility could directly impact nesting birds by crushing eggs or killing nestlings in active nests. Indirect impacts would occur if increased human activity and construction-generated noise and vibration near active nests caused adults to abandon eggs or recently hatched young. This could be a **potentially significant** impact. However, implementation of **MM-BIO-10** would avoid these impacts by scheduling construction work outside the nesting season or conducting pre-activity nesting bird surveys and avoiding active nests. Therefore, these project activities would not substantially impede the use of bird nursery sites; as such, potential impacts would be less than significant with mitigation.

Project activities could impact any bat maternity roosts that may form in the abandoned buildings in the future. Structure demolition associated with construction of the wood pellet processing facility could directly impact roosting bats by killing dependent young that are unable to fly. Indirect impacts would occur if increased human activity and construction-generated noise and vibration near active nests caused adults to abandon dependent young. These could be **potentially significant** impacts. However, implementation of **MM-BIO-8** and **MM-BIO-14** would avoid these impacts by educating workers about the potential presence of sensitive biological resources, including roosting bats, and scheduling construction and demolition work outside the bat maternity season or conducting a pre-construction survey for maternity roosts and avoiding any that are found. Therefore, these project activities would not impede the use of native bat nursery sites; as such, potential impacts would be less than significant with mitigation.

Once constructed, facility operations would likely preclude many wildlife species from commencing nesting or roosting on site due to regular human disturbance. Further, it is assumed that any wildlife establishing a nursery on site would already exhibit some tolerance to disturbances from ongoing operations and maintenance. As such, potential impacts associated with facility operation would be **less than significant.** No mitigation required.

Transport to Market

Port of Stockton

Wildlife Movement

The Port of Stockton site is not within an essential connectivity area, natural landscape block, or natural area, as defined by the CEHC (Spencer et al. 2010). The Stockton Deepwater Channel (San Joaquin River) is located adjacent to the Port site. The San Joaquin River is a migratory corridor for native fish and wildlife, such as salmonids and harbor seals. The Port of Stockton site is also within the Pacific flyway, an established air route of waterfowl and other birds migrating between wintering grounds in Central and South America and nesting grounds in Pacific Coasts states and provinces of North America.

The proposed project does not involve any construction or improvements to existing facilities within or over the San Joaquin River. Two large domes would be constructed at the Port site for storing and transporting pellets to a shiploader for export via a cargo ship. An estimated 29 cargo ships are anticipated for product loadout each year. There would be no direct or indirect impacts to the San Joaquin River resulting from pellet storage, transport, and export. As such, project construction and operations at the Port site would not interfere substantially with the movement of native fish or wildlife, or with established wildlife corridors, and there would be **no impact**. No mitigation is required.

Wildlife Nursery Sites

The Port site contains vegetation, barren areas, and structures that may support nursery sites for common native birds. If conducted during the nesting season (February 1 to August 31), construction activities could impact nesting birds. Ground disturbance and vegetation removal could directly impact nesting birds by crushing eggs or killing nestlings in active nests. Indirect impacts would occur if increased human activity and construction-generated noise and vibration near active nests caused adults to abandon eggs or recently hatched young. This could be a **potentially significant** impact. However, implementation of **MM-BIO-18** would avoid these impacts by scheduling construction work outside the nesting season or conducting pre-activity nesting bird surveys and avoiding active nests. Therefore, these project activities would not substantially impede the use of bird nursery sites; as such, potential impacts would be less than significant with mitigation.

The Port site provides potential roosting habitat for native bats protected by regulations defined in the CFGC. Bats could potentially roost in riparian trees or buildings in the vicinity of the Port site and forage along the Stockton Deepwater Channel (San Joaquin River) adjacent to the site. Regular human foot traffic, noise, and lighting at the adjacent properties likely precludes the potential for these species to roost in the area. In addition, it is assumed that any other bats roosting or otherwise utilizing the area are fairly adapted to such activities and any additional human activity resulting from the proposed development is not expected to result in adverse impacts to these species.

The proposed project does not anticipate the removal of riparian trees along the San Joaquin River adjacent to the Port site. However, because construction of the proposed project would occur near potential roosting habitat for bats, construction-related noise could result in the disturbance of bat roosts if occupied during construction. This could be a **potentially significant** impact. Implementation of **MM-BIO-17** and **MM-BIO-21** would avoid impacts by educating workers about the potential presence of sensitive biological resources, including roosting bats, and scheduling construction work outside the bat maternity season or conducting a pre-construction survey for

maternity roosts and avoiding any that are found. Therefore, potential impacts to bat nursery sites would be less than significant with mitigation.

As previously discussed, the proposed project does not involve any construction or improvements to existing facilities within or over the San Joaquin River. There would be no direct or indirect impacts to the San Joaquin River resulting from pellet storage, transport, and export. As such, project construction and operations at the Port site would not interfere substantially with wildlife and fish nursery sites in the San Joaquin River, and there would be **no impact.** No mitigation is required.

Impact BIO-6 The project may conflict with local policies or ordinances protecting biological resources.

Sustainable Forest Management Projects (Feedstock Acquisition)

GSNR Biomass Only Thinning Projects and Third-Party Harvest Residuals

Most counties and cities within the Working Area have adopted local ordinances and policies that protect various biological resources including native trees, wetland habitats, open space corridors, and other locally significant natural resources. These ordinances and policies vary in their definitions of protected trees (e.g., certain species, minimum diameter at breast height [dbh], trees that form riparian corridors) and other resources, and in the requirements for ordinance or policy compliance.

All GSNR Biomass Only Thinning Projects and third-party harvest residuals that are subject to local policies or ordinances would be required to comply with any applicable county, city, or other local policies, ordinances, and permitting procedures related to protection of biological resources. Further, each individual Sustainable Forest Management Project would be required to demonstrate compliance with all applicable all applicable land use plans, policies and regulations, including those identified in Section 3.10.2, Regulatory Setting. Therefore, the proposed project would not conflict with local policies or ordinances protecting biological resources; as such, there would be **no impact**. No mitigation is required.

Proposed feedstock activities in the Working Area would not include construction or operation of permanent structures or infrastructure. As a result, there would be **no impact**. No mitigation is required.

Wood Pellet Production

Lassen Facility

The Natural Resources and Wildlife elements in Chapters 3 and 5 of the Lassen County General Plan encourage the protection of biological resources in the County. The proposed project would not conflict with any of the goals or policies listed in the County's General Plan that protect biological resources. Relevant goals and policies for biological resources in Lassen County are presented in Section 3.3.2 above.

According to the County Ordinance Code Section 18.69, the intent of the Upland Conservation/Resource Management District is to manage local and valuable natural resources in the mountain, upland foothill, and valley areas consistent with the County's General Plan. As stated above, the proposed project would not conflict with any of the goals or policies for biological resources listed in the County's General Plan.

The proposed project would be consistent with the relevant goals and policies of the Natural Resources and Wildlife elements (Chapters 3 and 5) of the County General Plan, including maintenance of diverse and healthy vegetation

communities (Goal N-7), protection of rare and endangered plant species (Goal N-8), control invasive weeds and plant species (Goal N-9), and protect rare, threatened, and endangered wildlife species (Goal W-2). Therefore, project construction and operation would not conflict with local policies or ordinances protecting biological resources; as such, there would be **no impact**. No mitigation is required.

Tuolumne Facility

The Natural Resources Element in Chapter 16 of the Tuolumne County General Plan encourages the protection of biological resources in the County. For example, Implementation Program-16.B.j.1 requires the use of BMPs while working near retained oak woodlands to avoid inadvertent damage to oak trees. These BMPs include establishment of no-disturbance buffers around the outer canopy edge to prevent root and crown damage, soil compaction, and standard management practices to reduce introduction and spread of invasive species and other indirect effects.

Based on the preliminary grading plans, approximately 0.08 acres of blue oak woodland may be impacted by proposed road improvements at the Tuolumne Facility site. Several mitigation measures would avoid or minimize impacts to the oak woodland. **MM-BIO-16** requires implementation of actions to prevent the spread of invasive plants and noxious weeds that could compete with oak trees for water, light, and nutrients, which would reduce potential indirect impacts from competition with invasive species. In addition, **MM-BIO-15** requires that the contractor implement measures to avoid staging, equipment or vehicle use, soil excavation and fill, and trenching within the dripline of retained trees, as well as compliance with relevant goals and policies in the Tuolumne County General Plan.

The proposed project would be consistent with the relevant goals and policies in the Natural Resources Element (Chapter 16) of the County General Plan, including support of diversity and quality of biological resources (Goal 16B), evaluate and mitigate impacts to biological resources (Policy 16.B.5), and encourage oak woodland conservation and preservation of heritage trees (Policy 16.C.5).

While several mitigation measures would minimize impacts, the direct removal or degradation of any existing oak tree on the site would be a **potentially significant** impact. However, with implementation of **MM-BIO-3** (Compensate for Unavoidable Loss of Sensitive Natural Communities and Oak Woodlands), the impact would be reduced to less than significant with mitigation.

Transport to Market

Port of Stockton

The proposed project would result in the construction of project specific features and the use of an existing Port of Stockton Berth. The project site is located in the Port of Stockton West Complex, which has historically been used for port related activities, including warehousing. The proposed project would not conflict with any local policies or ordinances that protect biological resources within Joaquin County, the City of Stockton, and the Port of Stockton. Relevant policies and ordinances for biological resources at the Port site are presented in Section 3.3.2.2, State – California, above.

The proposed project would comply with the City of Stockton Municipal Code, Ballast Water Management Program, and any other relevant policies and ordinances for biological resources at the Port site. Therefore, project construction and operation would not conflict with local policies or ordinances protecting biological resources; as such, there would be **no impact**. No mitigation is required.

Impact BIO-7 The project may conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state conservation plan.

Sustainable Forest Management Projects (Feedstock Acquisition)

GSNR Biomass Only Thinning Projects and Third-Party Harvest Residuals

There is no adopted Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP), or any other approved local, regional, or state conservation plans that overlap with the Working Area (CDFW 2024i). As such, there would be **no impact.** No mitigation is required.

Wood Pellet Production

Lassen Facility

There is no adopted HCP or NCCP, or any other approved local, regional, or state conservation plans that overlap with the Lassen Facility site (CDFW 2024i). As such, there would be **no impact.** No mitigation is required.

Tuolumne Facility

There is no adopted HCP or NCCP, or any other approved local, regional, or state conservation plans that overlap with the Tuolumne Facility site (CDFW 2024i). As such, there would be **no impact.** No mitigation is required.

Transport to Market

Port of Stockton

Like all of San Joaquin County, the Port site is in the Plan Area for the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) (SJCOG 2000). While mitigation measures would minimize impacts to special-status species and riparian habitat (discussed above), construction activities at the Port site could still result in **potentially significant** impacts if special-status wildlife species and their habitat are not sufficiently avoided and if these species occur in areas not avoided by project activities. These impacts would be in direct conflict with the conservation and protection objectives of the SJMSCP. However, with implementation of **MM-BIO-2** (Compensate for Mortality, Injury, or Disturbance and Loss of Habitat Function for Special-Status Wildlife), **MM-BIO-3**, Compensate for Unavoidable Loss of Sensitive Natural Communities and Oak Woodlands, and **MM-BIO-4** (Compensate for Unavoidable Loss of Wetlands and Other Aquatic Resources) the impact would be reduced to less than significant with mitigation.

Once constructed, operation and maintenance impacts at the Port site would be limited to developed areas that generally lack habitat for special-status species. As such, covered species associated with the SJMSCP are not expected to use the Port site following construction, nor be impacted by associated maintenance and operation activities. As a result, there would be **no impact**. No mitigation is required.

3.3.4.3 Cumulative Impacts

This section considers cumulative impacts on biological resources under CEQA. “Cumulative impacts” under CEQA refers to two or more individual effects which, when considered together, are considerable or which compound or

increase other environmental impacts (CEQA Guidelines Section 15355). Consistent with Section 15130(b) of the CEQA Guidelines, the discussion reflects the severity of the impacts and the likelihood of their occurrence but does not provide as much detail as is provided under project-level impacts. The project-level impact analysis in Section 3.3.4.2 demonstrates that the proposed project would not interfere substantially with the movement of native fish or wildlife or with established wildlife corridors, and the proposed project would not conflict with local policies or ordinances protecting biological resources or adopted Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs). Therefore, no cumulative impact analysis for these topics is required.

The geographic context of cumulative impacts to biological resources for the proposed project varies depending on the project component. The geographic context for feedstock acquisition (Sustainable Forest Management Project) is on private and public forested land and other timberlands within the Working Area (shown as "Forest Management Area" on Figures 2-1 and 2-2). The geographic context for the wood processing facilities is each proposed facility site boundary plus a 5-mile buffer. The geographic context for export to market at the Port of Stockton is the Port site boundary plus a 5-mile buffer.

The project's contribution to significant cumulative impacts to special-status plant and wildlife species would not be cumulatively considerable.

Sustainable Forest Management Projects (Feedstock Acquisition)

GSNR Biomass Only Thinning Projects and Third-Party Harvest Residuals

Sustainable Forest Management Projects, including GSNR biomass only thinning projects and third-party harvest residuals, in combination with other related projects and plans within the cumulative study area, could contribute to significant cumulative impacts to special-status species. Many special-status species have been adversely affected by historic and ongoing habitat loss across their range. Other special-status species have extremely limited ranges or narrow habitat requirements; thus, loss of habitat function could further constrain the species range. However, implementation of PDFs and mitigation measures would reduce the proposed project's contribution to this impact. PDFs require pre-field desk reviews and as-needed focused/protocol surveys prior to commencement of biomass only thinning projects to identify special-status species and implementation of measures to avoid these species and their habitat. If avoidance is not feasible, **MM-BIO-1** through **MM-BIO-4** require the project proponents to fully compensate for such species and/or habitat impacts. Thus, with implementation of PDFs and mitigation measures, the proposed project would mitigate any project-level impacts to less than significant. Other related projects would comply with similar requirements, such as those set forth by the federal ESA, CESA, timber harvest plans, and USFS management directives. Therefore, the project's contribution would **not be cumulatively considerable**.

Wood Pellet Production

Lassen Facility

Past development of the Lassen site was part of the larger development of the Big Valley floor for primarily agricultural uses since the early 1900s. These past development activities resulted in the removal of natural lands that provided habitat prior to settlement.

As stated in Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, no cumulative projects were identified relative to the proposed Lassen Facility. The County has no active development applications within Big

Valley. No similar projects are proposed within the County. As such, cumulative impacts to special-status plant and wildlife species are not anticipated, and there would be **no cumulative impact.**

Tuolumne Facility

Past development of the Tuolumne site was facilitated by a new railroad route through the region in the late 1800s and a subsequent increase in lumber operations through the 1960s. A portion of the site operated as a sawmill since the early 1960's and then as a wood processing mill, which ceased operations in 2020. These past activities resulted in the removal of natural lands that provided habitat prior to settlement.

Construction of the proposed Tuolumne Facility site, in combination with other similar projects and plans in the region, could contribute to significant cumulative impacts to special-status species. An estimated 260 acres of undeveloped land in the County would be permanently converted as a result of construction at the Tuolumne Facility site (47 acres) and other cumulative projects (213 acres) (discussed in Chapter 3). However, implementation of mitigation measures would reduce the proposed project's contribution to this impact. **MM-BIO-9** through **MM-BIO-14** require focused/protocol surveys to identify special-status species and implementation of measures to avoid these species and their habitat. If avoidance is not feasible, **MM-BIO-1** and **MM-BIO-2** require the project proponents to fully compensate for such impacts. With implementation of mitigation measures, the proposed project would mitigate any project-level impacts to less than significant. Therefore, the project's contribution would **not be cumulatively considerable**.

Transport to Market

Port of Stockton

The Port of Stockton is located in a highly urbanized area surrounded by dense development. The Port site lacks suitable habitat for special-status plants, and habitat for special-status wildlife is present, but of poor quality. Special-status aquatic species potentially occurring in the Stockton Deepwater Channel (San Joaquin River) would not be affected because no new facilities would be constructed in or over the San Joaquin River, and pellet transport to cargo ships would occur in a sealed and contained system that would prevent pellets from dropping into the river. Special-status wildlife species with a potential to be affected by activities at the Port site include burrowing owl, Swainson's hawk, white-tailed kite, and loggerhead shrike. These species are typically found in annual grassland, agricultural, shrubland, oak woodland, and/or riparian habitat. Burrowing owl, Swainson's hawk, and white-tailed kite prefer habitat proximate to expansive foraging habitat.

Past development of the Port site was spurred by construction of the San Joaquin River shipping channel between 1933 and 1940 and the U.S. Navy purchasing Rough and Ready Island in 1944. Prior to development, and by 1927, most of Rough and Ready Island was cultivated fruit orchard. These past activities resulted in the removal of natural lands that provided habitat prior to settlement.

Construction and operation of the proposed Port site, in combination with other similar projects in the region, could contribute to a significant cumulative impact to special-status species. There would be an estimated 54 acres of undeveloped land permanently converted as a result of construction at the Port site (16 acres) and other cumulative development projects (38 acres) (discussed in Chapter 3). Land to be converted is generally fragmented and of poor quality for many special-status species due to regular disturbance and existing development. Approximately 2,490 acres of natural habitat for special-status species and approximately 26,165 acres of foraging and nesting habitat for Swainson's hawk and other nesting raptors would remain intact within 5 miles of the Port site. Further,

implementation of mitigation measures would reduce the proposed project's contribution to this impact. **MM-BIO-18** through **MM-BIO-21** require focused/protocol surveys to identify special-status species and implementation of measures to avoid these species and their habitat. If avoidance is not feasible, **MM-BIO-1** and **MM-BIO-2** require the project proponents to fully compensate for such impacts. With implementation mitigation measures, the proposed project would mitigate any project-level impacts to less than significant. Therefore, the project's contribution would **not be cumulatively considerable**.

The project's contribution to significant cumulative impacts to riparian habitat or other sensitive natural communities would not be cumulatively considerable.

Sustainable Forest Management Projects (Feedstock Acquisition)

GSNR Biomass Only Thinning Projects and Third-Party Harvest Residuals

Sustainable Forest Management Projects, including GSNR biomass only thinning projects and third-party harvest residuals, in combination with other related projects and plans within the cumulative study area, could contribute to a significant cumulative loss of riparian habitat or other sensitive natural communities. However, implementation of PDFs and mitigation measures would reduce the proposed project's contribution to this impact. PDFs require pre-field desk reviews and focused surveys prior to commencement of biomass only thinning projects to identify, characterize, and delineate sensitive natural communities and measures to avoid these resources. If avoidance is not feasible, **MM-BIO-3** requires the project proponents to fully compensate for such impacts. The proposed project would mitigate any cumulative contribution to less than significant. Therefore, the project's contribution would **not be cumulatively considerable**.

Wood Pellet Production

Lassen Facility

As stated in Chapter 3, no cumulative projects were identified relative to the proposed Lassen Facility. The County has no active development applications within Big Valley. No similar projects are proposed within the County. As such, **no cumulative impacts** to sensitive natural communities would occur.

Tuolumne Facility

As discussed above, construction of the wood processing facility at the Tuolumne site would avoid all riparian habitat and other sensitive natural communities. As such, **no cumulative impacts** to sensitive natural communities would occur.

Transport to Market

Port of Stockton

The Port site is composed primarily of disturbed or developed land cover, with only two small patches of riparian habitat dominated by invasive plants. The project's impact to riparian habitat would be very minimal and would have a very minor incremental effect upon riparian habitat in the surrounding area. The proposed project, in combination with other cumulative projects within the region, would not result in significant cumulative impacts and the project's contribution would **not be cumulatively considerable**.

The project's contribution to significant cumulative impacts to protected wetlands would not be cumulatively considerable.

Sustainable Forest Management Projects (Feedstock Acquisition)

GSNR Biomass Only Thinning Projects and Third-Party Harvest Residuals

Sustainable Forest Management Projects, including GSNR biomass only thinning projects and third-party harvest residuals, in combination with other similar projects and plans within the cumulative study area, could contribute to a cumulative loss of protected wetlands in the Working Area. However, implementation of PDFs and mitigation measures would reduce the proposed project's contribution to this impact. PDFs require pre-work surveys prior to commencement of biomass only thinning projects to identify and delineate aquatic resources for avoidance. If avoidance is not feasible, **MM-BIO-4** requires the project proponents to fully compensate for such impacts. The proposed project would mitigate any cumulative contribution to less than significant. Therefore, the project's contribution **would not be cumulatively considerable**.

Wood Pellet Production

Lassen Facility

As stated in Chapter 3, no cumulative projects were identified relative to the proposed Lassen Facility. The County has no active development applications within Big Valley. No similar development projects are proposed within the County. As such, **no cumulative impacts** to protected wetlands would occur.

Tuolumne Facility

The proposed project would permanently convert approximately 2.5 acres of aquatic resources at the Tuolumne Facility site (a very minor fraction of the estimated 970 acres of similar aquatic resources mapped within 5 miles of the site boundary [USFWS 2024a]). The other cumulative projects in the County (discussed in Chapter 3) do not involve permanent loss of protected wetlands or other aquatic resources. Therefore, cumulative impacts to protected wetlands would be less than significant and the project's contribution **would not be cumulatively considerable**.

Transport to Market

Port of Stockton

Based on preliminary design, the proposed project could permanently convert an estimated 2.5 acres of potentially jurisdictional aquatic resources at the Port site, including two constructed ditches and one seasonal wetland. The other cumulative projects in the region (within 5 miles of the Port site) (discussed in Chapter 3) either do not propose the permanent removal of aquatic resources (Port of Stockton and USACE 2022; Port of Stockton 2023) or the impact is currently unknown (Port of Stockton 2021b). Construction at the Port site and other cumulative projects in the region could permanently convert an estimated 177 acres (less than 1%) of aquatic resources, with approximately 30,328 acres of mapped aquatic resources remaining in the region (USFWS 2024a). Therefore. the proposed project, in combination with other cumulative projects in the region, would not result in significant cumulative impacts and the project's contribution **would not be cumulatively considerable**.

3.3.4.4 Mitigation Measures

With implementation of the PDFs described in Section 2.4 and other discipline mitigation measures (e.g., PDF-GEO-1 through -6), the proposed project could still result in potentially significant impacts to biological resources. Common to All Phases (Feedstock Acquisition, Wood Pellet Production, Transport to Market)

MM-BIO-1 Compensate for Mortality, Injury, Disturbance, or Unavoidable Loss of Special-Status Plants. If avoidance of take of plants species that U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), and/or U.S. Forest Service (USFS) list as rare, endangered, threatened, or candidate is not possible, GSNR will sufficiently compensate for such impacts. GSNR will initiate consultation with USFWS, CDFW, and/or USFS, as appropriate based on the identified species. Depending on whether the species are state and/or federally listed, the following steps will be associated with consultation and implementation of mitigation.

Federal Listed Species: If the proposed action may affect only federally listed species or critical habitat, and the action has a federal nexus (via other federal agency permit, funding, or approvals), consultation pursuant to Section 7 of the Federal Endangered Species Act (FESA) would apply. Under FESA Section 7, GSNR will need to prepare a Biological Assessment (BA) to assist the USFWS or USFS in its determination of the project's effect on species and/or critical habitat. If the action is not likely to adversely affect the listed species, no further mitigation is necessary.

If the action is likely to adversely affect a listed species, then the USFWS or USFS will prepare a Biological Opinion (BO). The conclusion of the BO will state whether or not the proposed action is likely to: 1. Jeopardize the continued existence of the listed species; and/or 2. Result in the destruction or adverse modification of critical habitat that appreciably diminishes the value of critical habitat as a whole for the conservation of the listed species. If the action is reasonably certain not to jeopardize the continued existence of the listed species or diminish the value of critical habitat as a whole for the species, then the BO will include an incidental take statement with the BO. Incidental take is subject to the terms and conditions provided in the incidental take statement. Terms and conditions included within a typical BO include:

- Monitoring
- Worker environmental awareness program (WEAP) training
- Minimization of construction-related impacts
- Preconstruction clearance surveys
- Weed management and monitoring
- Compensation for loss of habitat
- Protection of lands in perpetuity
- Mitigation ratios for impacts (e.g., no less than 1:1 mitigation for suitable habitat)
- Permanent protection and management of compensation lands
- Costs to acquire and manage lands
- Financial assurances

If the action has no associated federal action, permitting pursuant to FESA section 10(a)(1)(B) will apply. A Habitat Conservation Plan (HCP) will be prepared by GSNR and an application for an Incidental Take Permit (ITP). An applicant-prepared HCP will include, at a minimum, the following measures:

- Preservation (via acquisition or conservation easement) of existing habitat
- Enhancement or restoration of degraded or former habitat
- Creation of new habitat
- Establishment of buffer areas around existing habitats
- Restrictions to access

Both State and Federal Listed Species: If a plant species is listed by both FESA and the California Endangered Species Act (CESA), Fish and Game Code Section 2080.1 allows an applicant who has obtained a federal incidental take statement (FESA Section 7 consultation) or a federal ITP (FESA Section 10(a)(1)(B)) to request that the Director of CDFW find the federal documents consistent with CESA via a consistency determination per Section 2080.1 of CESA. If a consistency determination is issued, no further authorization or approval is necessary under CESA. If a consistency determination is not feasible, the process for "State Only Listed Species," as described below, will be implemented.

State Listed Species: For species that are listed by CDFW, but not the USFWS, as endangered, threatened, candidate, or a rare plant, and where take would occur, GSNR will apply for a State ITP under Section 2081(b) of the Fish and Game Code. When an ITP is issued, included terms and conditions will ensure that the items 1 through 5 below are met.

1. The authorized take must be incidental to an otherwise lawful activity.
2. The impacts of the authorized take must be minimized and fully mitigated.
3. The measures required to minimize and fully mitigate the impacts of the authorized take:
    a. Are roughly proportional in extent to the impact of the taking on the species;
    b. Maintain the GSNR's objective to the greatest extent possible; and
    c. May be successfully implemented by GSNR.
    d. Adequate funding is provided to implement the required minimization and mitigation measures and monitor compliance with the effectiveness of the measures.
4. Issuance of the permit will not jeopardize the continued existence of the CESA-listed species.

Non-Listed Rare Species: For rare species that are not listed by the USFWS or CDFW, GSNR will implement a Compensatory Mitigation Plan (Plan), prepared by a qualified botanist, that outlines at least one or a combination of the following:

- The protection, through land acquisition or a conservation easement, of land that supports an equal or greater number of plants of similar health; and/or,
- The creation of a new population on suitable unoccupied habitat through the salvage and relocation or propagation of impacted plants, or acquisition of similar plants/seed from local

genetic stock, at no less than 1:1 mitigation ratio. Plant relocation, propagation, or establishment will be subject to the following requirements:

- The Plan will be prepared by a qualified biologist and include at a minimum: (1) seed/propagule collection methods, (2) identification of receiver sites or locations for relocated or propagated plants and rationale for their selection, (3) success criteria for population establishment, including a not-to-exceed threshold for invasive species cover, (4) 5 years of maintenance and monitoring, (5) the adaptive management approaches that would be used to evaluate monitoring results and adjust management actions, if necessary, and (6) financial assurances for the funding of special-status plant mitigation.

MM-BIO-2 Compensate for Mortality, Injury, or Disturbance and Loss of Habitat Function for Special-Status Wildlife. If avoidance of take of wildlife species that U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), and/or U.S. Forest Service (USFS) list as rare, endangered, threatened, or candidate is not possible, GSNR will sufficiently compensate for such impacts. GSNR will initiate consultation with USFWS, CDFW, and/or USFS, as appropriate based on the identified species. Depending on whether the species are state and/or federally listed, the following steps will be associated with consultation and implementation of mitigation.

Federally Listed Species: If the proposed action may affect only federally listed species or critical habitat, and the action has a federal agency nexus, then consultation pursuant to Section 7 of the Federal Endangered Species Act (FESA) would apply. Under FESA Section 7, GSNR will need to prepare a Biological Assessment (BA) to assist the USFWS or USFS in its determination of the project's effect on species and/or critical habitat. If the action is not likely to adversely affect the listed species, no further mitigation is necessary.

If the action is likely to adversely affect a listed species, then the USFWS or USFS will prepare a Biological Opinion (BO). The conclusion of the BO will state whether or not the proposed action is likely to: 1. Jeopardize the continued existence of the listed species; and/or 2. Result in the destruction or adverse modification of critical habitat that appreciably diminishes the value of critical habitat as a whole for the conservation of the listed species. If the action is reasonably certain not to jeopardize the continued existence of the listed species or diminish the value of critical habitat as a whole for the species, then the BO will include an incidental take statement with the BO. Incidental take is subject to the terms and conditions provided in the incidental take statement. Terms and conditions included within a typical BO include:

- Monitoring
- Worker environmental awareness program (WEAP) training
- Minimization of construction-related impacts
- Preconstruction clearance surveys
- Weed management and monitoring
- Compensation for loss of habitat
- Protection of lands in perpetuity
- Mitigation ratios for impacts (e.g., no less than 1:1 mitigation for suitable habitat)
- Permanent protection and management of compensation lands

- Costs to acquire and manage lands
- Financial assurances

If the action has no federal agency nexus, permitting pursuant to FESA Section 10(a)(1)(B) will occur. A Habitat Conservation Plan (HCP) will be prepared by GSNR and an application for an Incidental Take Permit (ITP). An applicant-prepared HCP will include, at a minimum, the following measures:

- Preservation (via acquisition or conservation easement) of existing habitat
- Enhancement or restoration of degraded or former habitat
- Creation of new habitat
- Establishment of buffer areas around existing habitats
- Restrictions to access

Both State and Federal Listed Species: If a species is listed by both FESA and the California Endangered Species Act (CESA), Fish and Game Code Section 2080.1 allows an applicant who has obtained a federal incidental take statement (FESA Section 7 consultation) or a federal ITP (FESA Section 10(a)(1)(B)) to request that the Director of CDFW find the federal documents consistent with CESA via a consistency determination per Section 2080.1 of CESA. If a consistency determination is issued, no further authorization or approval is necessary under CESA. If a consistency determination is not feasible, the process for "State Only Listed Species," as described below, will be implemented.

State Listed Species: For species that are listed by CDFW, but not the USFWS, as endangered, threatened, candidate, or a rare species, and where take would occur, GSNR will apply for a State ITP under Section 2081(b) of the Fish and Game Code. When an ITP is issued, included terms and conditions will ensure that the items 1 through 5 below are met.

1. The authorized take must be incidental to an otherwise lawful activity.
2. The impacts of the authorized take must be minimized and fully mitigated.
3. The measures required to minimize and fully mitigate the impacts of the authorized take:
    a. Are roughly proportional in extent to the impact of the taking on the species;
    b. Maintain GSNR's objective to the greatest extent possible; and
    c. May be successfully implemented by GSNR.
4. Adequate funding is provided to implement the required minimization and mitigation measures and monitor compliance with the effectiveness of the measures.
5. Issuance of the permit will not jeopardize the continued existence of the CESA-listed species.

Non-Listed Rare Species: For rare species that are not listed by the USFWS or CDFW, GSNR will implement a Compensatory Mitigation Plan (Plan), as-needed and prepared by a qualified biologist, through at least one or a combination of the following:

- Preserving existing species habitat outside of the treatment area in perpetuity; this may entail purchasing lands and/or mitigation credits from a CDFW- and/or USFWS-approved entity in sufficient quantity to offset the residual significant impacts to habitat.
- Restoring or enhancing existing species habitat within or outside of the treatment area (e.g., decommissioning roads, installing perching or roosting structures, or removing movement barriers or other existing features that are adversely impacting the species).

Prior to finalizing the Plan, GSNR will consult with any applicable responsible agencies to ensure that the Plan will satisfy responsible agency requirements (e.g., permits and approvals):

- For California Fully Protected Species, GSNR will submit the Plan to CDFW for review and comment.
- For other special-status wildlife species, GSNR may consult with CDFW and/or USFS regarding the availability and applicability of compensatory mitigation and other related technical information.

MM-BIO-3 Compensate for Unavoidable Loss of Sensitive Natural Communities and Oak Woodlands. If significant impacts to sensitive natural communities or oak woodlands cannot feasibly be avoided, GSNR will sufficiently compensate for such impacts. Compensation shall include:

- A qualified botanist will conduct a pre-construction survey to identify and quantify the number of plants that could be potentially removed or disturbed within the sensitive natural community or oak woodland. The botanist will prepare a mitigation plan to address implementation and monitoring requirements to ensure that project activities would result in no net loss of habitat functions and values and to offset the loss of any vegetation/plants to be removed or disturbed. The plan will contain, at a minimum: goals and objectives; a description of the extent of plants/vegetation to be removed or disturbed; plant collection, propagation, and planting methods; locations on site in which the plants will be transplanted; monitoring methods and timing; invasive species eradication methods; interim and final success criteria/performance standards; measures to be taken in the event that the propagation and planting is not successful; identification of responsible entities; and reporting requirements. The plan will be approved by the appropriate County. Propagation and planting will occur at a minimum 1:1 basis to ensure no net loss of the sensitive natural community or oak woodland.
- Natural areas temporarily impacted by project activities will be restored with appropriate native vegetation. Restored areas will be identified and determined to feasibly support the proposed native revegetation to adequately mitigate project impacts. Feasibility of native revegetation is primarily based on suitable soils, slopes, and aspect as well as the presence of similar native vegetation adjacent to the proposed mitigation areas.

MM-BIO-4 Compensate for Unavoidable Loss of Wetlands and Other Aquatic Resources. If temporary or permanent loss of protected wetlands and other aquatic resources cannot feasibly be avoided, GSNR will implement the following actions:

- Prior to project activities, GSNR will coordinate with the appropriate USACE district and RWQCB regional staff to assure conformance with permitting requirements of Section 401 and 404 of the Clean Water Act and the Porter–Cologne Water Quality Control Act. Prior to activity within CDFW-jurisdictional lake or streambed or associated riparian habitat, GSNR will coordinate with the appropriate CDFW regional staff to assure conformance with California Fish and Game Code Section 1600 permitting requirements.
- As part of the permit application process, GSNR will sufficiently mitigate to ensure no-net-loss of waters at a minimum of 1:1 with establishment or re-establishment for impacts on aquatic resources as a part of an overall strategy to ensure no net loss, or at a higher ratio if establishment or re-establishment mitigation is not available. Final mitigation ratios and credits will be a minimum of 1:1 and determined in consultation with USACE, RWQCB and/or CDFW based on agency evaluation of current resource functions and values and through each agency's respective permitting process.
- Should applicant-sponsored mitigation be implemented, a mitigation and monitoring plan (Plan) will be prepared in accordance with resource agency guidelines and approved by the agencies in accordance with the proposed permits. The Plan will include but is not limited to a conceptual planting plan including planting zones, grading, and irrigation, as applicable; a conceptual planting plant palette; a long-term maintenance and monitoring plan; annual reporting requirements; proposed success criteria; legal and funding mechanisms; and parties responsible for long-term management and monitoring of the restored or enhanced habitat. Any off-site applicant-sponsored mitigation shall be conserved and managed in perpetuity.

Lassen Facility Site (Only)

MM-BIO-5 Worker Environmental Awareness Program at the Lassen Facility Site. GSNR will require crew members and contractors to receive worker environmental awareness program (WEAP) training from a qualified biologist prior to project commencement. The training will describe the appropriate work practices necessary to effectively implement all relevant mitigation measures and to comply with applicable environmental laws and regulations regarding biological resources. The training will include the identification, relevant life history information, and avoidance of pertinent special-status species; identification and avoidance of sensitive natural communities and habitats present or with the potential to occur in the work area; impact minimization procedures; and reporting requirements. The training will instruct workers when it is appropriate to stop work and allow wildlife encountered during work activities to leave the area unharmed and to report encounters to the project biologist. The project biologist will immediately contact USFWS, USFS, and/or CDFW (as appropriate) if a special-status species is encountered and cannot leave the site on its own (without being handled). All attendees of the training will be required to sign a log documenting attendance and completion of the training.

MM-BIO-6 Nesting Bird Surveys and Avoidance at the Lassen Facility Site. Tree and vegetation removal at the Lassen Facility site will be conducted outside of the nesting season (February through September) as feasible. If not feasible, the following measures will be implemented to avoid or minimize impacts to nesting birds:

- A qualified biologist shall conduct a pre-construction survey for nesting birds no more than 7 days prior to vegetation or structure removal or ground-disturbing activities conducted during

the nesting season (February through September). The survey shall cover the limits of construction and suitable nesting habitat within 500 feet for raptors and 100 feet for other nesting birds, as feasible and accessible.

- If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance buffer from the active nest. The buffer distance shall typically range from 50 to 500 feet and shall be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground-disturbance schedule. Limits of construction to avoid active nests shall be established in the field with flagging, fencing, or other appropriate barriers, and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.
- If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days elapse between the survey and vegetation removal activities.
- If an active nest is identified in or adjacent to the construction zone after construction has started, work in the vicinity of the nest shall be halted until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the birds have fledged and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest.

MM-BIO-7 Compensatory Mitigation Plan for the Permanent Loss of Wetlands and Other Aquatic Resources at the Lassen Facility Site. The project applicant will compensate for the permanent loss of wetlands and other aquatic resources anticipated from facility construction. Compensatory mitigation to ensure no net loss of aquatic resources at a minimum of 1:1 ratio shall be achieved through one or a combination of the following (in order of priority):

- Based on site soil, hydrology, and watershed characteristics, the southern portion of the Lassen Facility site could support approximately 47.8 acres of seasonal wetland (APNs 001-270-026, 001-270-029, and 013-040-013; WRA 2024c). Thus, GSNR will:
  - Implement on-site applicant-sponsored 1:1 mitigation in accordance with an agency-approved Wetland Mitigation and Monitoring Plan (Plan). The Plan will be prepared by a qualified biologist or similar in accordance with resource agency guidelines and submitted to the relevant resource agencies (e.g., USACE, RWQCB, and CDFW) for review and approval. The Plan will include at a minimum: a conceptual planting plan including planting zones, grading, and irrigation, as applicable; a conceptual planting plant palette; a long-term maintenance and monitoring plan; annual reporting requirements; proposed success criteria; legal and funding mechanisms; and parties responsible for long-term management and monitoring of the restored or enhanced habitat. On-site applicant-sponsored mitigation shall be conserved and managed in perpetuity.
- Purchase mitigation credits from an agency-approved wetlands mitigation bank or pay an agency-approved in-lieu fee.

Tuolumne Facility Site (Only)

MM-BIO-8 Worker Environmental Awareness Program at the Tuolumne Facility Site. GSNR will require crew members and contractors to receive worker environmental awareness program (WEAP) training from a qualified biologist prior to project commencement. The training will describe the appropriate work practices necessary to effectively implement all relevant mitigation measures and to comply with applicable environmental laws and regulations regarding biological resources. The training will include the identification, relevant life history information, and avoidance of pertinent special-status species; identification and avoidance of sensitive natural communities and habitats present or with the potential to occur in the work area; impact minimization procedures; and reporting requirements. The training will instruct workers when it is appropriate to stop work and allow wildlife encountered during work activities to leave the area unharmed and to report encounters to the project biologist. The project biologist will immediately contact USFWS, USFS, and/or CDFW (as appropriate) if a special-status species is encountered and cannot leave the site on its own (without being handled). All attendees of the training will be required to sign a log documenting attendance and completion of the training.

MM-BIO-9 Special-Status Plant Focused/Protocol Surveys and Avoidance at the Tuolumne Facility Site. According to CDFW (2018), plant communities dominated by short-lived perennials and annuals may require multiple surveys to adequately document baseline conditions. Focused rare plant surveys were conducted at the site in May 2021. Since construction at the Tuolumne site will occur more than 3 years from the date the rare plant surveys were last conducted, GSNR will take the following actions:

- A qualified RPF or botanist will conduct protocol-level surveys for special-status plant species prior to initiation of ground-disturbance. Six non-listed special-status plant species will be targeted during the survey: Beaked clarkia (*Clarkia rostrate),* Tuolumne button-celery (*Eryngium pinnatisectum*), spiny-sepaled button-celery (*Eryngium spinosepalum*), forked hare-leaf (*Lagophylla dichotoma),* veiny monardella (*Monardella venosa),* and Patterson's navarretia (*Navarretia paradoxiclara*). The survey will follow the most current and relevant agency survey protocols and guidelines for special-status plants (e.g., CDFW 2018; USFWS 2000; CNPS 2001). The protocol surveys will be conducted in suitable habitat that could be affected by the project and timed to coincide with the blooming or other appropriate phenological period of the target species (as determined by a qualified RPF or botanist), or all species in the same genus as the target species will be assumed to be special-status.
- Should rare plants be documented within 50 feet of the construction footprint, the following actions will be implemented to avoid and minimize impacts to individual plants:
- Wherever feasible, adjustments will be made to the limits of grading boundaries to confine work to avoid populations of special-status plants by at least 50 feet or as otherwise determined by a qualified botanist and in consideration of the type and extent of ground disturbance, potential for indirect impacts following ground disturbance activities, topography, and other factors.
- Prior to construction activities, a qualified botanist will flag or fence the location of special-status plant populations and the corresponding avoidance setback. This flagging will be in addition to, and distinguished apart from, any required construction boundary fencing. The

construction contractor will be responsible for maintaining the flagging through the duration of construction. The flagging (or similar) will be removed immediately following construction.

- If avoidance of rare plants is not feasible, a Rare Plant Salvage and Translocation Plan will be prepared by a qualified botanist prior to implementation. The Rare Plant Salvage and Translocation Plan will be approved by the County and/or CDFW and will include, at a minimum, the following components: identification of occupied habitat to be preserved and removed; identification of on-site or off-site preservation, restoration, enhancement, or translocation locations; methods for preservation, restoration, enhancement, and/or translocation; goals and objectives; replacement ratio and success standard of 1:1 for impacted to established acreage; a monitoring program to ensure mitigation success; adaptive management and remedial measures in the event that the performance standards are not achieved; and financial assurances and a mechanism for conservation of any mitigation lands required in perpetuity.

MM-BIO-10 Nesting Bird Surveys and Avoidance at the Tuolumne Facility Site. Tree and vegetation removal at the Tuolumne Facility site will be conducted outside of the nesting season (February through September) as feasible. If not feasible, the following measures will be implemented to avoid or minimize impacts to nesting birds:

- A qualified biologist shall conduct a pre-construction survey for nesting birds no more than 7 days prior to vegetation or structure removal or ground-disturbing activities conducted during the nesting season (February through September). The survey shall cover the limits of construction and suitable nesting habitat within 500 feet for raptors and 100 feet for other nesting birds, as feasible and accessible.
- If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance buffer from the active nest. The buffer distance shall typically range from 50 to 500 feet and shall be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground-disturbance schedule. Limits of construction to avoid active nests shall be established in the field with flagging, fencing, or other appropriate barriers, and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.
- If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days elapse between the survey and vegetation removal activities.
- If an active nest is identified in or adjacent to the construction zone after construction has started, work in the vicinity of the nest shall be halted until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the birds have fledged and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest.

MM-BIO-11 Northwestern Pond Turtle Protection at the Tuolumne Facility Site. Northwestern pond turtles have been documented in the perennial pond in the northern portion of the Tuolumne site. Thus, GSNR will take the following actions:

- No ground-disturbance will be permitted within 1,640 feet (500 meters) of suitable aquatic habitat for northwestern pond turtle during the turtle overwintering period from October to March.
- No ground-disturbance will be permitted within 656 feet (200 meters) of aquatic habitat occupied by northwestern pond turtle.
- GSNR will implement applicable Best Management Practices (BMPs) for northwestern pond turtle in accordance with the most recent and agency-accepted guidelines available at the time of project implementation (e.g., Department of Defense (DOD) Legacy Resource Management Program 2020 and Oregon Department of Fish and Wildlife 2015).
  - If ground-disturbance within 1,640 feet (500 meters) of suitable aquatic habitat from October to March or 656 feet (200 meters) of occupied aquatic habitat is not feasible GSNR will consult with USFWS on appropriate measures to identify and avoid take of any northwestern pond turtles nesting in the construction footprint as part of its federally listed species consultation described under MM-BIO-2. These measures may include all or a combination of the following to avoid take of nesting pond turtles: Qualified biologists shall conduct visual encounter surveys for pond turtle nests or evidence of nesting from May to June prior to any ground disturbance within the above buffers. A minimum 50-foot-radius exclusion zone shall be established around any pond turtle nests or suspected nests found during the visual encounter surveys using high-visibility fencing. The exclusion zone shall remain in effect until the biologist has verified that the nest is no longer active.
  - Occupied aquatic habitat shall be isolated from adjacent upland nesting habitat within the construction footprint before April in the year of construction. The intent of this measure is to ensure that once hatchling pond turtles leave their upland nests in April, no additional nests will be established in the construction footprint during the following season. Unclimbable, smooth fencing (e.g., Animex HDPE#2 material or wooden fencing) will be installed at the interface between aquatic and upland habitat. The fencing will be maintained between its installation and project start with regular monitoring (1 to 2 hours of observation every monitoring period) to ensure that turtles and other special-status species are not being entrapped by the fencing.

MM-BIO-12 Tricolored Blackbird Protection at the Tuolumne Facility Site. Wetlands and riparian areas in the northern portion of the Tuolumne site provide nesting habitat for tricolored blackbird. Thus, the GSNR will take the following actions:

- As feasible, vegetation removal activities will be conducted outside of the nesting season for tricolored blackbird (estimated to be March through June), and ground disturbance at the site will avoid suitable nesting habitat and areas within 50 to 300 feet of suitable nesting habitat.
- A qualified biologist will conduct a pre-construction survey for nesting tricolored blackbirds no more than 7 days prior to vegetation or structure removal or ground-disturbing activities conducted during the species' nesting season (estimated to be March through June). The survey will be conducted in accordance with MM-BIO-10.
- If an active tricolored blackbird nesting colony is encountered during the pre-construction survey, the GSNR will postpone any work with a potential to impact the colony and implement MM-BIO-2 as appropriate.

- Tricolored blackbird will be included in the worker environmental awareness program, which will educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.

MM-BIO-13 Habitat Assessment, Focused Surveys, and Avoidance of California Red-legged Frog and California Tiger Salamander at the Tuolumne Facility Site. The Tuolumne facility site is located within the known geographic range of California red-legged frog and California tiger salamander. Thus, GSNR will take the following actions:

- To determine if any aquatic habitat features in the northern portion of the site are occupied by California red-legged frog, a qualified biologist will conduct a single breeding season survey in accordance with USFWS' Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog (USFWS 2005). After the survey, the biologist will report the results to the appropriate USFWS office to determine if additional surveys are warranted. If the survey is negative and the USFWS determines that further surveys are unnecessary because the site is unoccupied by California red-legged frog, no additional actions would be necessary.
- If the California red-legged frog survey results are inconclusive and the USFWS determines that additional surveys are necessary, the biologist will conduct up to seven additional breeding surveys in accordance with USFWS (2005). If these surveys are negative, the site will be assumed to be unoccupied by California red-legged frog and no additional actions would be necessary.
- If California red-legged frogs are found occupying any aquatic features at any time during the above surveys, MM-BIO-2 would be implemented. Compensatory mitigation for impacts on California red-legged frog habitat will be provided at a minimum 2:1 ratio. Replacement habitat will be in-kind and located on site, if feasible.
- To address uncertainty on the status of California tiger salamander in the site vicinity, a qualified biologist will prepare a formal site assessment for California tiger salamander in accordance with USFWS' and CDFW's Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander (USFWS and CDFG 2003). If the site assessment determines and USFWS and CDFW agree that California tiger salamander occurrence on the site is not expected, no additional actions would be necessary.
- If the site assessment and/or USFWS or CDFW determine that formal surveys are needed to determine California tiger salamander presence or absence on the site, GSNR may conduct multi-year aquatic larval and upland drift fence surveys in accordance with USFWS and CDFW (2003), or assume that California tiger salamanders are present and mitigate accordingly as part of the Section 7 consultation process described under MM-BIO-2.
- If California tiger salamanders are found occupying the site during surveys or are assumed present, compensatory mitigation for impacts on California tiger salamander habitat will be provided at a minimum 2:1 ratio. Replacement habitat will be in-kind and located on site, if feasible.

MM-BIO-14 Native Bat Roost Protection at the Tuolumne Facility Site. Riparian vegetation and various human-made structures at the Tuolumne site may provide roosting habitat for native bats. Thus, GSNR will take the following actions:

- If feasible, any structure demolition and tree removal activities will be conducted outside of the bat maternity season (March 1 – August 31) to avoid potential impacts to maternity colonies.
- If structure demolition and tree removal activities must occur during the bat maternity season, a qualified biologist will conduct a pre-construction survey for maternity roosts within 14 days prior to construction. The survey will include a visual inspection of potential roosting features (bats need not be present) and presence of guano in the construction footprint and within 50 feet. Potential roosting features found during the survey will be flagged or marked.
- If bats (individuals or colonies) are detected and cannot be completely avoided, GSNR will implement measures to safely evict bats under the direction of a qualified biologist. If individuals cannot be safely evicted due to factors such as lack of alternative roosting sites, as determined by the qualified bat biologist, ground-disturbing activities within a specified distance of the roost (specified distance to be determined by the qualified biologist, based on surroundings and vulnerability of roost site, etc.) will be postponed or halted until conditions are suitable for safe eviction or the roost has vacated naturally.

MM-BIO-15 Native Tree Protection at the Tuolumne Facility Site. The project applicant will minimize damage to existing native trees on the Tuolumne Facility site from construction activities and potential soil compaction in the root zone. GSNR or construction contractor(s) will implement the below measures in addition to those required for compliance with the goals and policies in the Natural Resources Chapter of the Tuolumne County General Plan.

- No construction vehicles, construction equipment, mobile offices (e.g., trailer), or materials will be permitted within the driplines of any native trees to be retained by the project.
- If work or temporary traffic must proceed within the driplines, one of the following techniques will be followed: (1) place 6–12 inches of mulch in the work or traffic area; (2) place at least 4 inches of mulch in the work or traffic area and then place sheets of 0.75-inch-thick plywood or road mats with 4-inch-thick layer of mulch; or (3) place 4 to 6 inches of gravel with staked geotextile fabric beneath.
- Soil surface removal greater than 1 foot will not be permitted within the driplines of retained trees. No cuts will occur within 5 feet of their trunks.
- To the extent feasible, earthen fill greater than 1 foot deep will not be placed within the driplines of retained trees, and no fill will be placed within 5 feet of their trunks.
- Trenching will not occur within the driplines of retained native trees. If it is absolutely necessary to install trenches within the driplines of preserved trees, the trench will be either bored or drilled, but not within 5 feet of the trunk.

MM-BIO-16 Invasive Plant Control at the Tuolumne Facility Site. To prevent the spread of non-native and invasive plant species and pathogens, the project will implement the following measures:

- The contractor will clean all construction vehicles and equipment prior to entering undeveloped portions of the site (overland travel).
- Rock, sand, and any other material used for erosion control purposes will originate from a weed-free source if available. Refer to the following sources for more information:
  - https://www.cal-ipc.org/solutions/prevention/weedfreeforage/
  - https://www.cal-ipc.org/solutions/prevention/weedfreegravel/

- Areas temporarily disturbed by construction will be revegetated and reseeded. Revegetation will incorporate local native species to the extent practicable or sterile non-native species to reduce the spread of invasive plants in the project area. Seed collection source and species diversity will be selected to maintain the genetic integrity and diversity of native plants used for revegetation.

Port Site (Only)

MM-BIO-17 Worker Environmental Awareness Program at the Port Site. GSNR will require crew members and contractors to receive worker environmental awareness program (WEAP) training from a qualified biologist prior to project commencement. The training will describe the appropriate work practices necessary to effectively implement all relevant mitigation measures and to comply with applicable environmental laws and regulations regarding biological resources. The training will include the identification, relevant life history information, and avoidance of pertinent special-status species; identification and avoidance of sensitive natural communities and habitats present or with the potential to occur in the work area; impact minimization procedures; and reporting requirements. The training will instruct workers when it is appropriate to stop work and allow wildlife encountered during work activities to leave the area unharmed and to report encounters to the project biologist. The project biologist will immediately contact USFWS, USFS, and/or CDFW (as appropriate) if a special-status species is encountered and cannot leave the site on its own (without being handled). All attendees of the training will be required to sign a log documenting attendance and completion of the training.

MM-BIO-18 Nesting Bird Surveys and Avoidance at the Port Site. Tree and vegetation removal at the Port site will be conducted outside of the nesting season (February through September) as feasible. If not feasible, the following measures will be implemented to avoid or minimize impacts to nesting birds:

- A qualified biologist shall conduct a pre-construction survey for nesting birds no more than 7 days prior to vegetation or structure removal or ground-disturbing activities conducted during the nesting season (February through September). The survey shall cover the limits of construction and suitable nesting habitat within 500 feet for raptors and 100 feet for other nesting birds, as feasible and accessible.
- If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance buffer from the active nest. The buffer distance shall typically range from 50 to 500 feet and shall be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground-disturbance schedule. Limits of construction to avoid active nests shall be established in the field with flagging, fencing, or other appropriate barriers, and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.
- If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days elapse between the survey and vegetation removal activities.
- If an active nest is identified in or adjacent to the construction zone after construction has started, work in the vicinity of the nest shall be halted until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by

construction. Appropriate measures may include a no-disturbance buffer until the birds have fledged and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest.

MM-BIO-19 Protocol-Level Surveys for Swainson's Hawk at the Port Site. A qualified biologist will conduct surveys for Swainson's hawk prior to ground-disturbing activities at the Port site, if undertaken during the Swainson's hawk nesting season (March 1 – August 31). The surveys will be conducted in accordance with the Swainson's Hawk Technical Advisory Committee (TAC) Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (TAC 2000). The survey will cover the limits of construction and suitable nesting habitat within 500 feet, to the extent feasible.

- If an active nest is observed in the survey area, construction within 500 feet of the nest will be delayed until young hawks have fledged and are independent of the nest, as determined by a qualified biologist. The qualified biologist, in consultation with CDFW, may reduce the 500-foot buffer based on the type, timing, extent, and intensity of the construction activity and other factors such as site topography and vegetation cover between the construction activity and the nest. Construction within 500 feet of the nest may reinitiate once all young have fledged and are no longer dependent upon the nest.
- If no active nests are identified during the survey no additional action is needed.

MM-BIO-20 Protocol-Level Surveys for Burrowing Owl at the Port Site. A qualified biologist will conduct surveys for burrowing owl within 30 days prior to ground-disturbing activities at the Port site. The survey will cover the limits of ground disturbance and potentially suitable nesting habitat within 300 feet, to the extent feasible. If ground-disturbing activities are delayed, then additional surveys will be conducted such that no more than 7 days elapse between the survey and ground-disturbing activities. If no potential burrowing owl nests are detected during the survey, no additional actions are needed, and ground-disturbing activities may proceed.

- If nesting burrowing owls are observed during the survey, ground-disturbing activities within 300 feet of occupied burrows will be delayed until young owls have fledged and are independent of the burrow, as determined by a qualified biologist. The qualified biologist may reduce the 300-foot buffer based on the type, timing, extent, and intensity of the construction activity and other factors such as site topography and vegetation cover between the construction activity and the burrow. Once all young have fledged and are no longer dependent upon the nest burrow, the burrow exclusion procedure described below will be implemented prior to resuming construction activities in the area.
- If overwintering burrowing owls are observed in or adjacent to the construction footprint during the survey, construction will be postponed until the qualified biologist can fully implement a California Department of Fish and Wildlife-approved burrow exclusion plan (to be prepared by the qualified biologist). The exclusion plan will be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012). Once owls have been successfully excluded and unoccupied burrows evacuated, construction in the area may proceed.
- If no active nests or overwintering burrowing owls are identified during the survey no additional action is needed.

MM-BIO-21 Native Bat Roost Protection at the Port Site. Riparian vegetation and various human-made structures at the Port site may provide roosting habitat for native bats. Thus, GSNR will take the following actions:

- If feasible, any structure demolition and tree removal activities will be conducted outside of the bat maternity season (March 1 – August 31) to avoid potential impacts to maternity colonies.
- If structure demolition and tree removal activities must occur during the bat maternity season, a qualified biologist will conduct a pre-construction survey for maternity roosts within 14 days prior to construction. The survey will include a visual inspection of potential roosting features (bats need not be present) and presence of guano in the construction footprint and within 50 feet. Potential roosting features found during the survey will be flagged or marked.
- If bats (individuals or colonies) are detected and cannot be completely avoided, GSNR will implement measures to safely evict bats under the direction of a qualified biologist. If individuals cannot be safely evicted due to factors such as lack of alternative roosting sites, as determined by the qualified bat biologist, ground-disturbing activities within a specified distance of the roost (specified distance to be determined by the qualified biologist, based on surroundings and vulnerability of roost site, etc.) will be postponed or halted until conditions are suitable for safe eviction or the roost has vacated naturally.

3.3.4.5 Significance After Mitigation

Impact BIO-1a The project may have a substantial adverse effect, either directly or through habitat modifications, on special-status plant species, or substantially reduce the number or restrict the range of a rare or endangered plant.

MM-BIO-1, **MM-BIO-9**, and **MM-BIO-16** would reduce the potential for substantial adverse effect on special-status plant species as a result of the proposed project, such that potentially significant impacts would be reduced to **less than significant**.

Impact BIO-1b The project may have a substantial adverse effect, either directly or through habitat modifications, on special-status wildlife species, or substantially reduce the number or restrict the range of a rare or endangered animal.

MM-AES-1, **MM-BIO-2**, **MM-BIO-8**, **MM-BIO-10** through **MM-BIO-14,** and **MM-BIO-17** through **MM-BIO-20** would reduce the potential for substantial adverse effect on special-status wildlife species as a result of the proposed project, such that potentially significant impacts would be reduced to **less than significant**.

Impact BIO-2 The project may substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community.

MM-BIO-1, **MM-BIO-2**, and **MM-BIO-8** through **MM-BIO-16** would reduce the potential for substantial adverse effect on existing fish or wildlife populations and/or plant or animal communities as a result of the proposed project, such that potentially significant impacts would be reduced to **less than significant**.

Impact BIO-3 The project may have a substantial adverse effect on riparian habitat or other sensitive natural communities.

MM-BIO-3 would reduce the potential for substantial adverse effect on riparian habitat or other sensitive natural communities as a result of the proposed project, such that potentially significant impacts would be reduced to **less than significant**.

Impact BIO-4 The project may have a substantial adverse effect on federally or state-protected wetlands.

MM-BIO-4, **MM-BIO-5**, **MM-BIO-7**, **MM-BIO-8,** and **MM-BIO-17** would reduce the potential for substantial adverse effect on federally or state protected wetlands and other aquatic resources as a result of the proposed project, such that potentially significant impacts would be reduced to **less than significant**.

Impact BIO-5 The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

MM-BIO-6, MM-BIO-8, **MM-BIO-10**, **MM-BIO-14**, **MM-BIO-17**, **MM-BIO-18**, and **MM-BIO-21** would reduce the potential for substantial adverse effects to the movement of native fish or wildlife, established wildlife corridors, or native wildlife nursery sites as a result of the proposed project, such that potentially significant impacts would be reduced to **less than significant**.

Impact BIO-6 The project may conflict with local policies or ordinances protecting biological resources?

The proposed project may conflict with any local policies or ordinances protecting biological resources, specifically preservation of oak habitat at the Tuolumne site. Implementation of **MM-BIO-3**, **MM-BIO-15**, and **MM-BIO-16** would reduce the impact to **less than significant**.

Impact BIO-7 The project may conflict with the provisions of an adopted HCP or NCCP, or other approved local, regional, or state conservation plans.

MM-BIO-2, **MM-BIO-3**, and **MM-BIO-4** would reduce the potential for conflict with the provisions of the MSJCP at the Port of Stockton site, such that potentially impacts would be reduced to **less than significant**.

3.3.5 References

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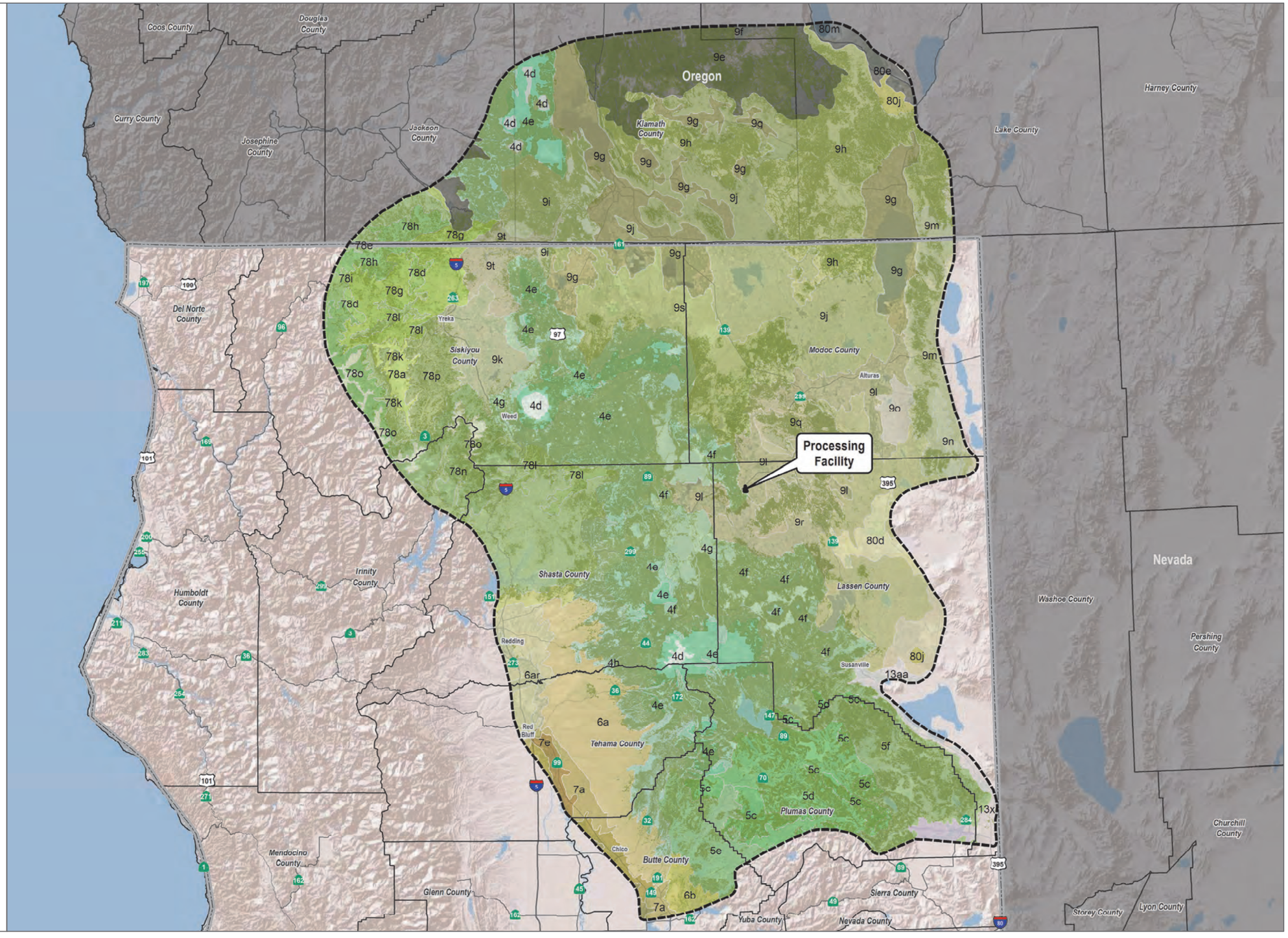
- Potential Feed Stock Area
- Forest Management Area (Timber Lands)
- County Boundary

EPA Level IV Ecoregion

- 13aa Sierra Nevada-Influenced Semiarid Hills and Basins
- 13ab Sierra Valley
- 13h Lahontan and Tonopah Playas
- 13x Sierra Nevada-Influenced Ranges
- 4d Cascade Subalpine/Alpine
- 4e High Southern Cascades Montane Forest
- 4f Low Southern Cascades Mixed Conifer Forest
- 4g California Cascades Eastside Conifer Forest
- 4h Southern Cascades Foothills
- 5c Northern Sierra Upper Montane Forests
- 5d Northern Sierra Mid-Montane Forests
- 5e Northern Sierra Lower Montane Forests
- 5f Northeastern Sierra Mixed Conifer-Pine Forests
- 6a Tuscan Flows
- 6ar Upper Sacramento River Alluvium
- 6b Northern Sierran Foothills
- 6e Tehama Terraces
- 6f Foothill Ridges and Valleys
- 78a Rogue/Illinois/Scott Valleys
- 78d Serpentine Siskiyous
- 78e Inland Siskiyous
- 78g Klamath River Ridges
- 78h Border High-Siskiyous
- 78i Western Klamath Low Elevation Forests
- 78k Eastern Klamath Low Elevation Forests
- 78l Eastern Klamath Montane Forests
- 78m Marble/Salmon Mountains-Trinity Alps
- 78n Scott Mountains
- 78o Klamath Subalpine
- 78p Duzel Rock
- 7a Northern Terraces
- 7b North Valley Alluvium
- 7c Butte Sink/Sutter and Colusa Basins
- 7e Sacramento/Feather Riverine Alluvium
- 80d Pluvial Lake Basins
- 80g High Lava Plains
- 80j Semiarid Uplands
- 9g Klamath/Goose Lake Basins
- 9h Fremont Pine/Fir Forest
- 9i Southern Cascades Slope
- 9j Klamath Juniper Woodland/Devils Garden
- 9k Shasta Valley
- 9l Pit River Valleys
- 9m Warner Mountains
- 9n High Elevation Warner Mountains
- 9o Likely Tableland
- 9p Modoc/Lassen Juniper-Shrub Hills and Mountains
- 9q Adin/Horsehead Mountains Forest and Woodland
- 9r Adin/Dixie Low Hills
- 9s Modoc Lava Flows and Buttes
- 9t Old Cascades



SOURCE: Bing Maps 2023, EPA 2023

DUDEK

0 12.5 25 Miles

FIGURE 3.3-1

Working Area - Northern California - Ecoregions

Golden State Natural Resources Forest Resiliency Demonstration Project

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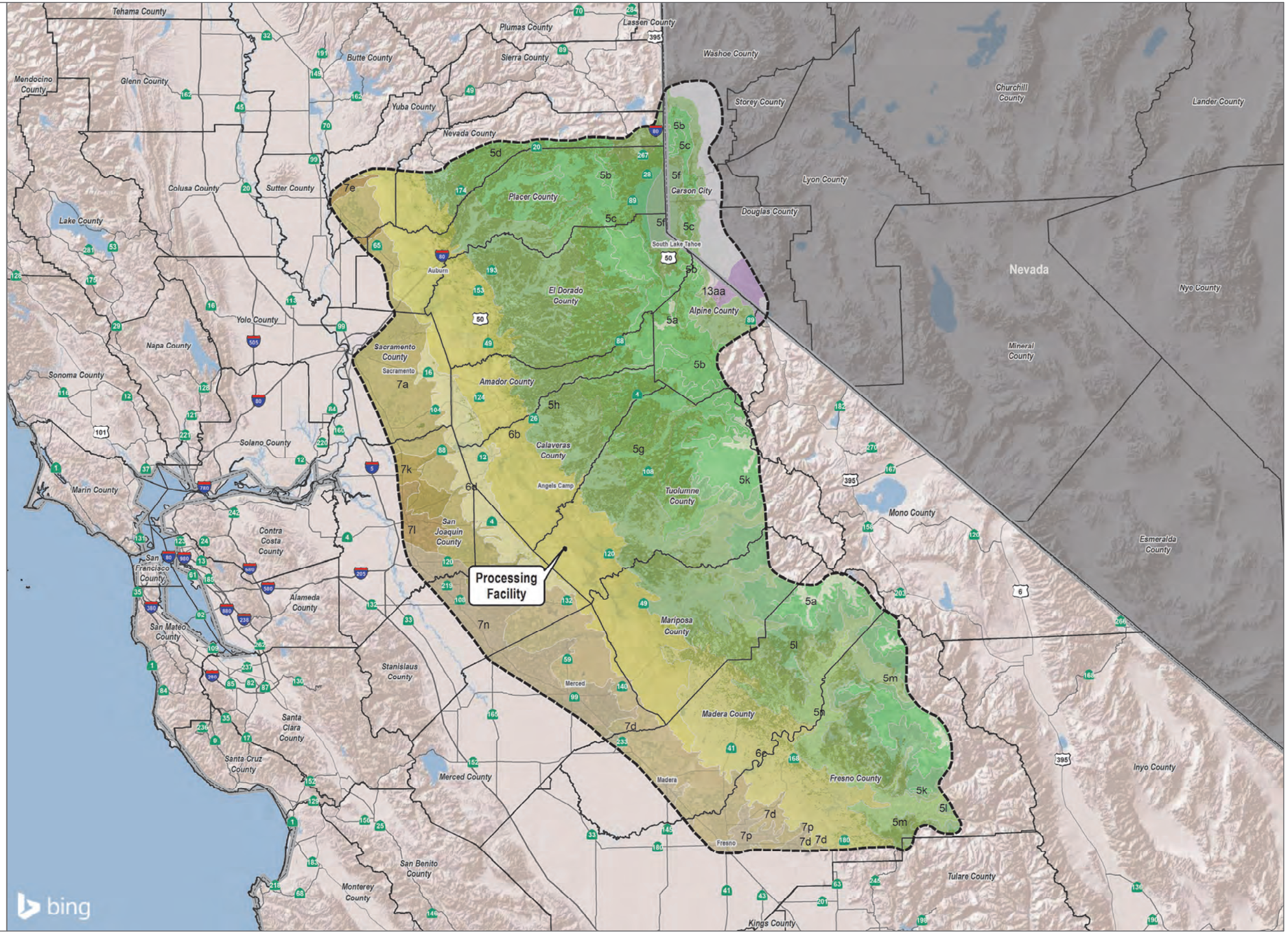
- Potential Feed Stock Area
- Forest Management Area (Timber Lands)
- County Boundary

EPA Level IV Ecoregion

- 13aa Sierra Nevada-Influenced Semiarid Hills and Basins
- 13x Sierra Nevada-Influenced Ranges
- 13y Sierra Nevada-Influenced High Elevation Mountains
- 5a Sierran Alpine
- 5b Northern Sierra Subalpine Forests
- 5c Northern Sierra Upper Montane Forests
- 5d Northern Sierra Mid-Montane Forests
- 5e Northern Sierra Lower Montane Forests
- 5f Northeastern Sierra Mixed Conifer-Pine Forests
- 5g Central Sierra Mid-Montane Forests
- 5h Central Sierra Lower Montane Forests
- 5k Southern Sierra Subalpine Forests
- 5l Southern Sierra Upper Montane Forests
- 5m Southern Sierra Mid-Montane Forests
- 5n Southern Sierra Lower Montane Forest and Woodland
- 6b Northern Sierran Foothills
- 6c Southern Sierran Foothills
- 6d Camanche Terraces
- 7a Northern Terraces
- 7d Southern Hardpan Terraces
- 7e Sacramento/Feather Riverine Alluvium
- 7j Delta
- 7k Lodi Alluvium
- 7l Stockton Basin
- 7n Manteca/Merced Alluvium
- 7p Granitic Alluvial Fans and Terraces



SOURCE: Bing Maps 2023, EPA 2023

DUDEK

0 12.5 25 Miles

FIGURE 3.3-2

Working Area - Central Sierra Nevada - Ecoregions

Golden State Natural Resources Forest Resiliency Demonstration Project

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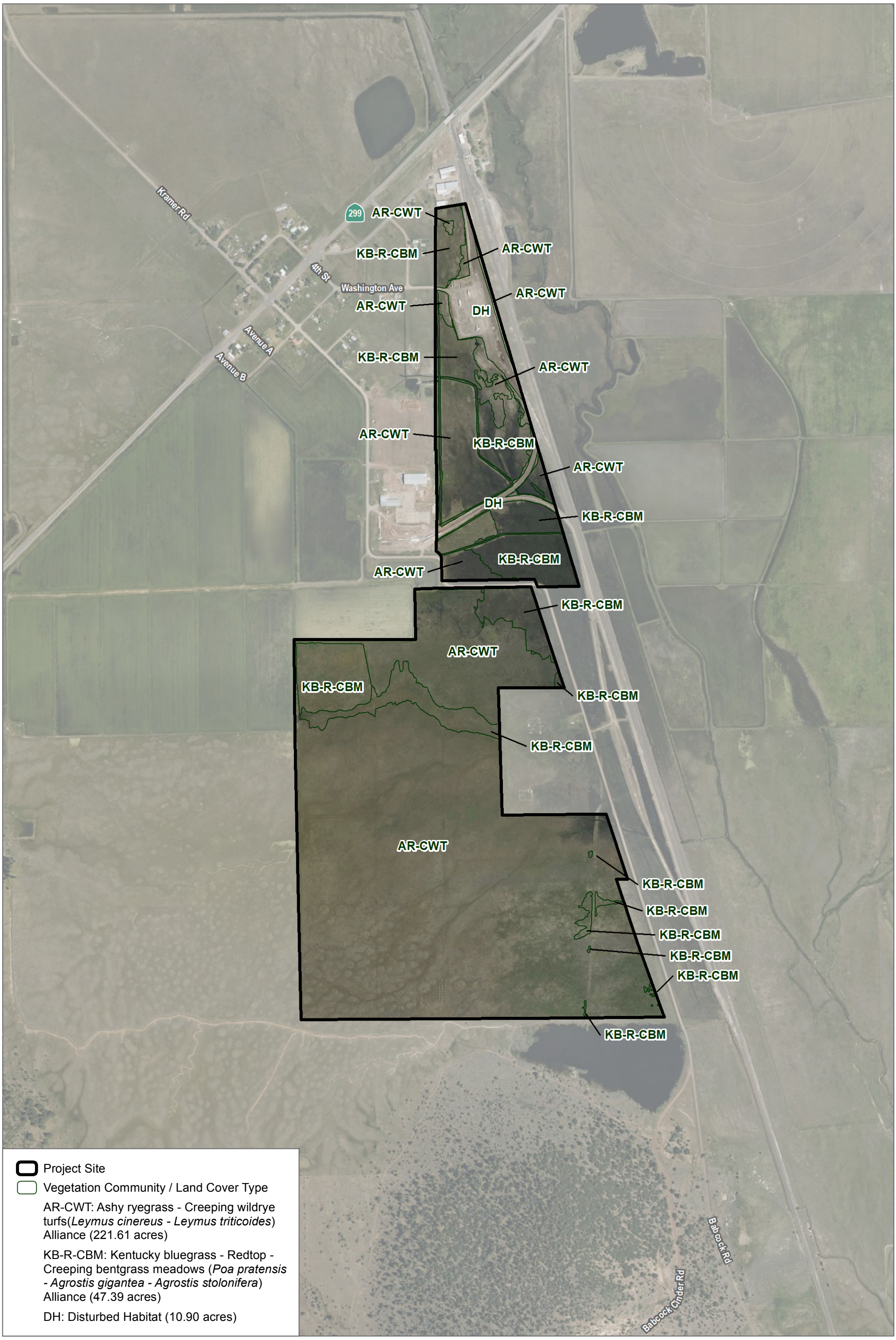

SOURCE: Bing Maps 2021, Open Street Map 2019, FRAP 2015

DUDEK

0 405 810 Feet

FIGURE 3.3-3

Lassen Facility - Vegetation Communities and Land Cover Types

Golden State Natural Resources Forest Resiliency Demonstration Project

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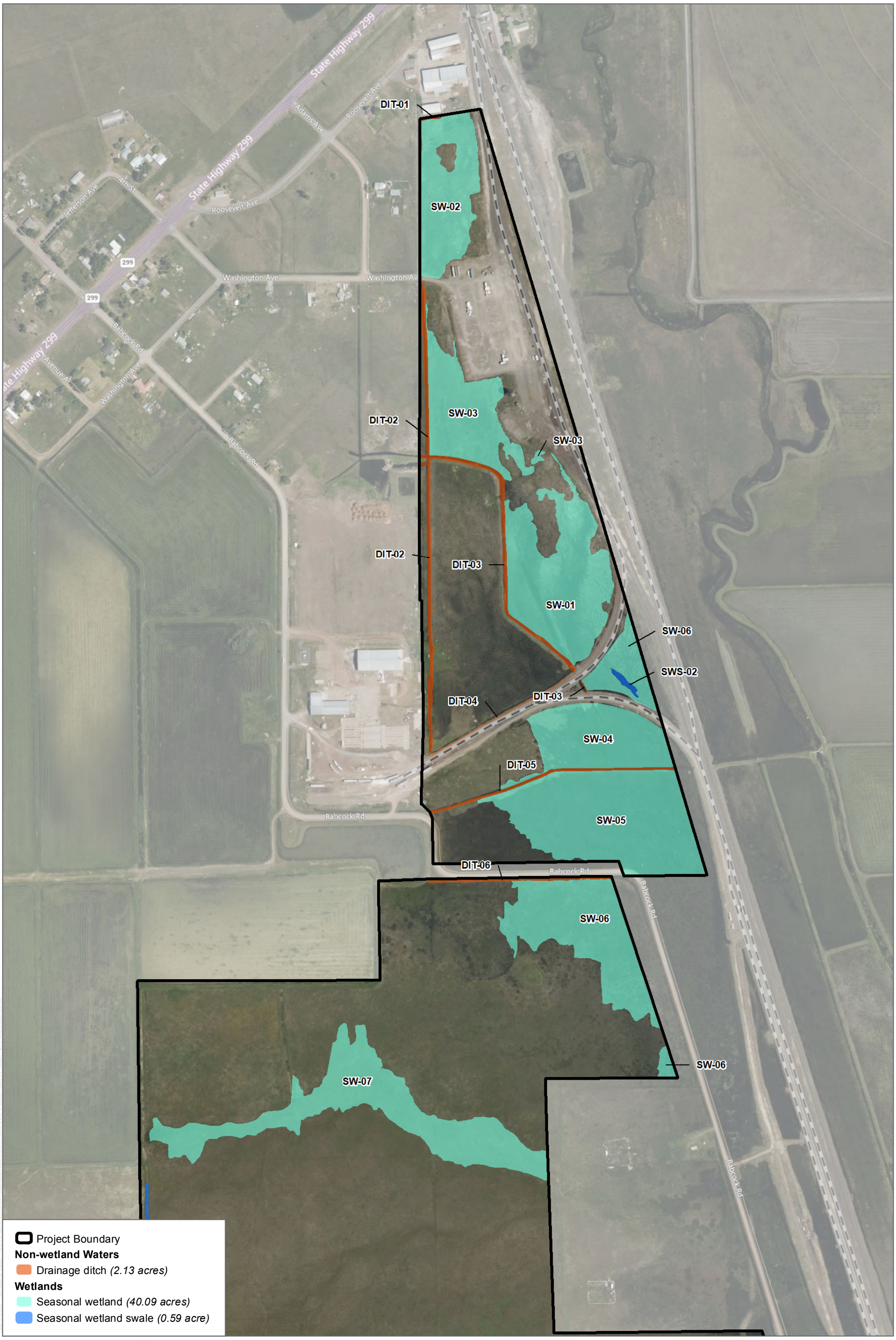

SOURCE: Bing Maps 2024

DUDEK

0 200 400 Feet

FIGURE 3.3-4A

Lassen Facility - Aquatic Resources

Golden State Natural Resources Forest Resiliency Demonstration Project

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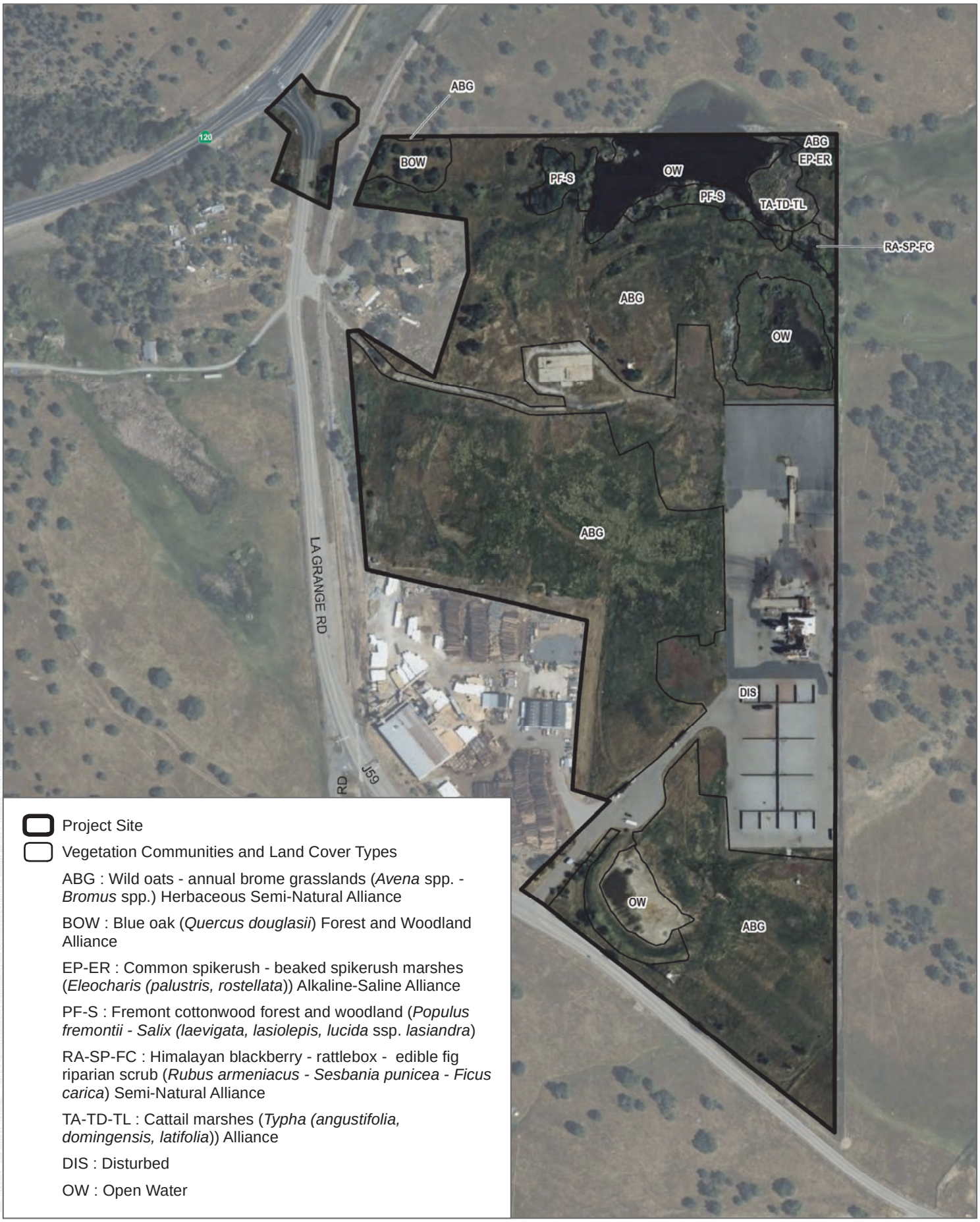

SOURCE: Bing Maps Sept 2015 - Mar 2017

DUDEK

0 175 350 Feet

FIGURE 3.3-5

Tuolumne Facility - Vegetation Communities and Land Cover Types

Golden State Natural Resources Forest Resiliency Demonstration Project

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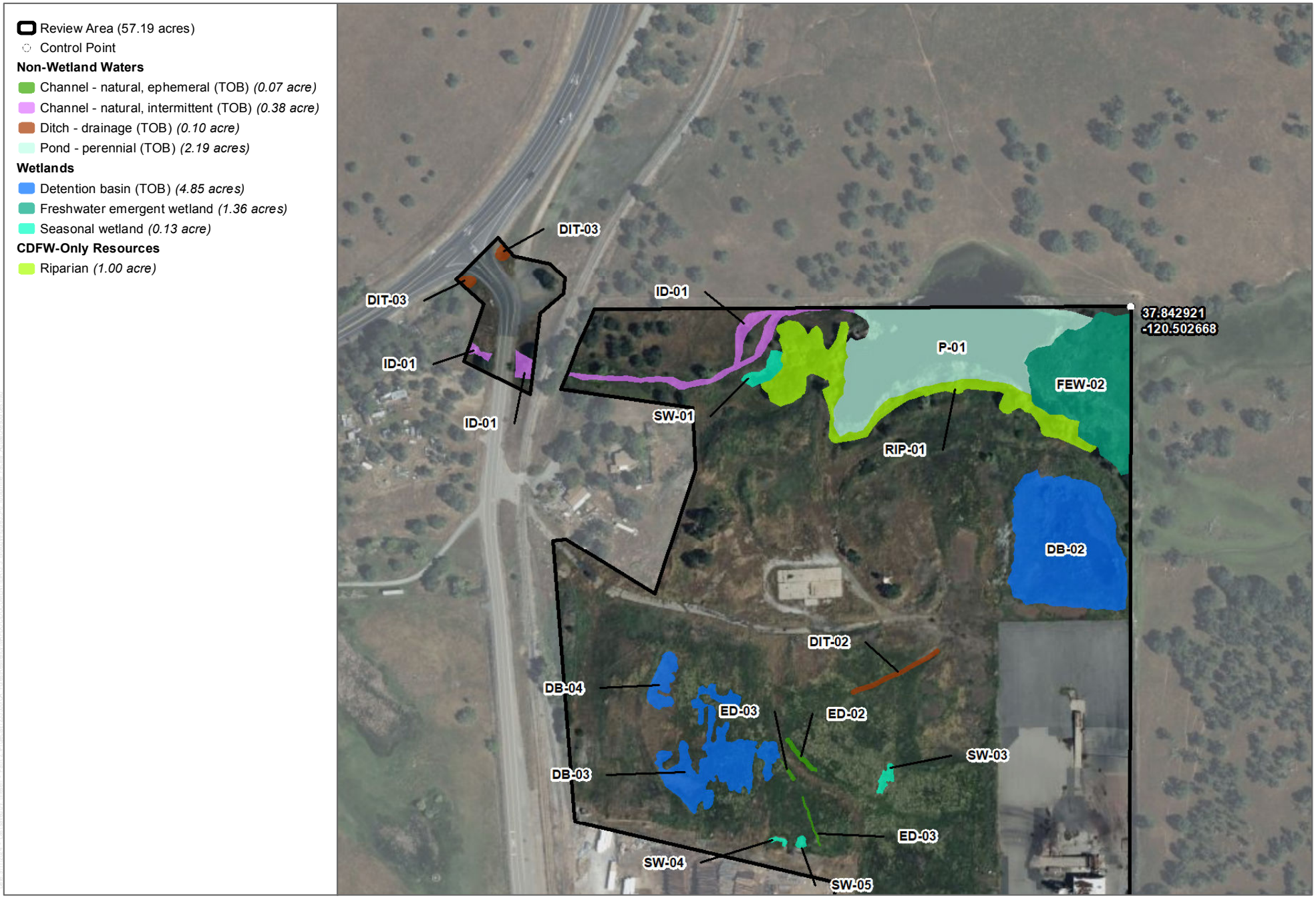

SOURCE: ESIR Imagery 2023, OpenStreetMap

DUDEK

0 150 300 Feet

FIGURE 3.3-6A

Tuolumne Facility - Aquatic Resources

Golden State Natural Resources Forest Resiliency Demonstration Project

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SOURCE: ESIR Imagery 2023, OpenStreetMap

DUDEK

0 150 300 Feet

FIGURE 3.3-6B

Tuolumne Facility - Aquatic Resources

Golden State Natural Resources Forest Resiliency Demonstration Project

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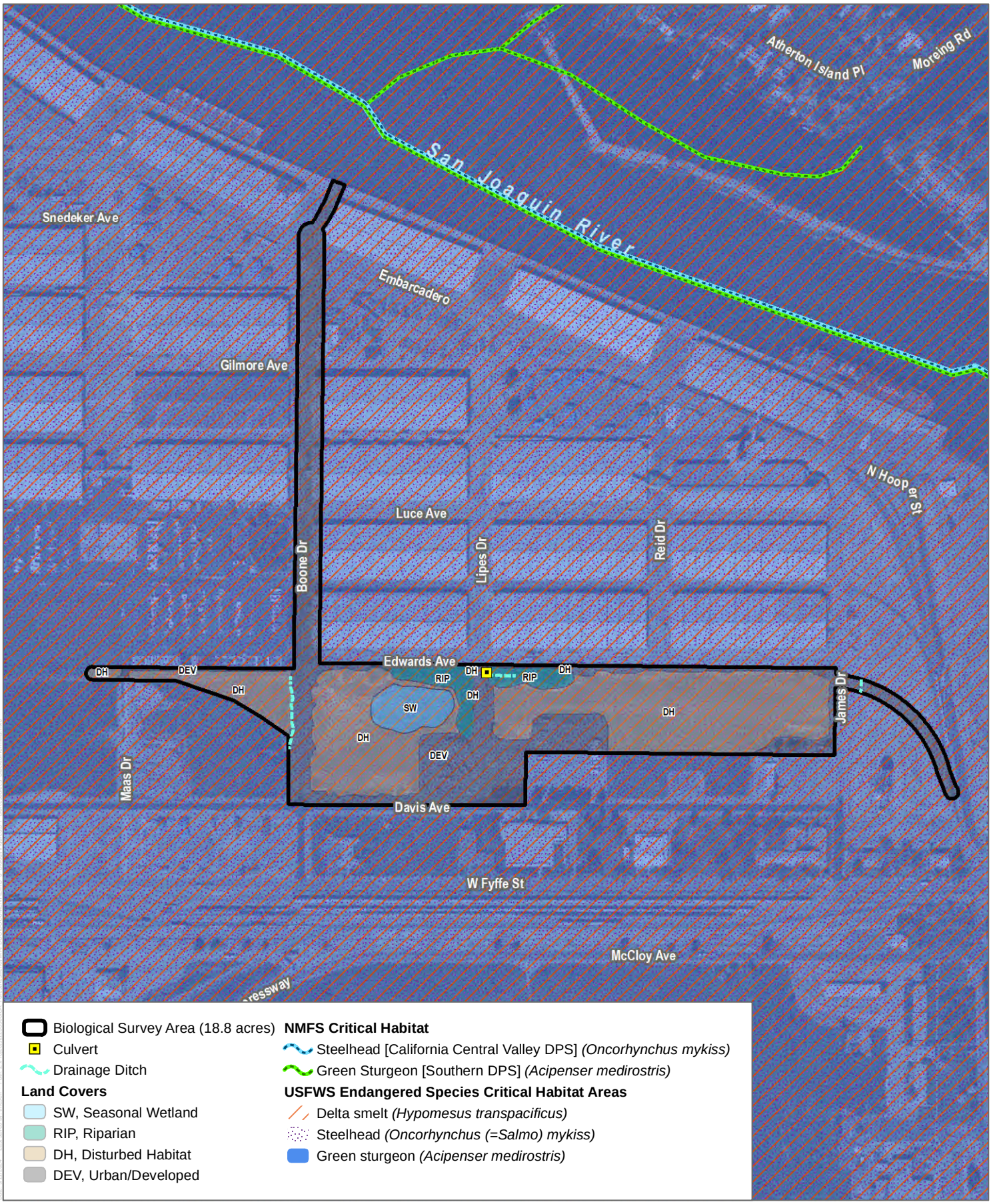

SOURCE: Bing Maps 2023, NOAA 2023, USFWS 2024, San Joaquin County 2021

DUDEK

0 250 500 Feet

FIGURE 3.3-7

Port of Stockton - Biological Resources

Golden State Natural Resources Forest Resiliency Demonstration Project

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Oregon

Nevada

Lassen Site

Tuolumne Site

Haul Routes

Forest Management Area (National Forests)

Natural Landscape Blocks

Higher cost to ecological areas

Lower cost to ecological areas

SOURCE: ESRi 2023; Bing Imagery 2023; USFS 2023; CDFW 2020

DUDEK

0 32,500 65,000 Feet

FIGURE 3.3-8

Working Area - Wildlife Connectivity

Golden State Natural Resources Forest Resiliency Demonstration Project

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